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WATER BULLETIN NUMBER 25

Flow of the Rio Grande
and
Related Data

*From Elephant Butte Dam, New Mexico
to the Gulf of Mexico*

1955

STORAGE IN MAJOR RESERVOIRS

SOURCES OF RIVER FLOW

DIVERSIONS

SUSPENDED SILT

CHEMICAL ANALYSES

SANITARY ASPECTS OF WATER QUALITY

METEOROLOGIC DATA

DRAINAGE BASIN AND IRRIGATED AREAS

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FOREWORD

This bulletin presents the twenty-fifth compilation of the stream discharges and related data concerning the international portion of the Rio Grande, prepared jointly by the United States and Mexican Sections of the International Boundary and Water Commission. The stream flow data and kindred subjects pertain to the Rio Grande and its important tributaries near their confluence with the main stream, from Elephant Butte, New Mexico to the Gulf of Mexico. The first publication in the series was Water Bulletin No. 1 for the year 1931. The present volume contains the information for the year 1955.

International stream gaging on the Rio Grande was initiated in 1889, when the station at El Paso, Texas was established. A number of stations on the Rio Grande and its tributaries downstream from El Paso were established in 1900 and operated until 1914. Between 1914 and 1923, except for a few months in 1919 and 1920, all stream-gaging work on the international reach of the river was suspended. In 1923, the work was resumed and carried on independently by the two countries until 1931, when the present joint program of stream measurements was adopted.

During 1955, the United States Section of the Commission operated the stream-gaging stations on the Rio Grande at El Paso, American Dam, Island, County Line, Fort Quitman, Upper Presidio, Lower Presidio, Johnson Ranch, Agua Verde, Langtry, Below Diablo Dam Site, San Antonio Crossing, Chapeño, Fort Ringgold, San Benito, and Lower Brownsville. The Mexican Section operated the stream-gaging stations on the main stream at Juárez, Eagle Pass, Laredo, Below Anzaldúa Dam Site, and Progreso. Each Section operated the gaging stations on tributary streams, floodways, and diversions within its own country.

The total drainage area within the outer rim of the Rio Grande Basin is 335,500 square miles. However, nearly half of this area yields no runoff to the river, the estimated productive area of the watershed being 182,215 square miles. Reservoirs in the basin have a total storage capacity of approximately 8,700,000 acre-feet, in addition to the International Falcón Reservoir, which has a conservation capacity of 2,400,000 acre-feet. A present total of 2,000,000 acres is irrigated below Elephant Butte Dam on the Rio Grande and below Red Bluff Dam on the Pecos River. The residual flow from the Rio Grande that escaped to the Gulf of Mexico averaged 2,300,000 acre-feet per year for the period 1934-1955.

Acknowledgments

Other agencies which have each contributed to some part of the data published herein include: the Bureau of Plant Industry, the Division of Soils and Agricultural Engineering, and the Soil Conservation Service of the U. S. Department of Agriculture; the Bureau of Reclamation and the Geological Survey of the U. S. Department of the Interior; the Weather Bureau of the U. S. Department of Commerce; the Texas Board of Health; the Colorado State Engineer; the New Mexico State Engineer; the Red Bluff Water Power Control District; the Willacy County Water Control and Improvement District No. 1; the El Paso Department of Water and Sewerage; the Laredo City Water Department; the Ministry of Hydraulic Resources of Mexico; the Meteorological Service of Mexico; the Cfa. Agrícola de Fuerza Eléctrica del Río Conchos, S.A.; the Federal Board of Public Improvement Works of Nuevo Laredo, Tamaulipas; and the Water and Drainage Board of Matamoros, Tamaulipas.

Additional contributions have been made by individuals and corporations and specific notation is made for such, as well as for those of the above-named agencies, where the data appear. The courtesy and co-operation of those who made these contributions are acknowledged with our appreciation.

GENERAL HYDROLOGIC CONDITIONS FOR 1955

Along and Adjacent to the International Portion of the Rio Grande

During the year 1955, temperatures were about normal, with slight deviations at the various stations. Evaporation was about 94% of normal. Precipitation averaged 75% of normal from El Paso to Diablo Dam Site, 75% of normal from Diablo Dam Site to Falcón Dam, 69% of normal from Falcón Dam to Fort Ringgold, and 82% of normal for the Lower Rio Grande Valley on the United States side.

The yearly volume of flow of the Rio Grande from El Paso to Falcón Dam was much below normal, varying from 15% of normal at El Paso to 3% of normal at Fort Quitman and 63% of normal at Laredo. Below Falcón Dam, the flow in the Rio Grande was largely regulated by releases from Falcón Reservoir and at Chapeño Gaging Station, the flow was 107% of the estimated normal at this point.

The yearly volume of flow of the measured tributaries below Fort Quitman, in both the United States and Mexico, was below normal. On the United States side, the average flow was 68% of normal, with Terlingua and Alamito Creek flows being slightly above normal. In Mexico, the total measured tributary flow, excluding Río Alamo and Río San Juan, was 764,300 acre-feet or 59% of the normal flow of 1,481,200 acre-feet.

Return flow to the Rio Grande at the Maverick Power Plant near Eagle Pass was 438,800 acre-feet or 81% of the seven-year average. No water was returned through the Poniente Drain.

No floods of consequence occurred on the Rio Grande in 1955. A discharge of 96,800 second-feet on the Rio Grande Below Diablo Dam Site was the highest flow recorded during the year.

For all reservoirs in the Rio Grande Basin having capacity greater than 15,000 acre-feet, excepting Blue-water Reservoir, the average amount of water in storage during 1955 was 2,213,200 acre-feet or 59% of the normal 3,731,200 acre-feet. In the United States, stored water in these reservoirs averaged 29% of normal, while in Mexico, the average was 77% of normal. There was a net decrease in storage of 880,100 acre-feet in the International Falcón Reservoir. Storage varied from a high of 2,347,600 acre-feet on January 1 to a low of 647,800 acre-feet on July 18, and averaged 1,413,000 acre-feet during the year.

Diversions from the Rio Grande in the El Paso-Juárez valley, both in the United States and Mexico, were about 15% of normal due to the scarcity of water in Elephant Butte Reservoir. Maverick Canal diversions were 94% of normal. In the Lower Rio Grande Valley, diversions below Fort Ringgold were 186% of a 34-year normal on the United States side. Diversions through the Amzalduás Canal for irrigation in Mexico were about 214% of the 4-year average. No diversions were made through the Retamal Canal. Municipal diversions in the United States and Mexico were 110% and 151%, respectively, of the average for the most recent 10 years.

In 1955, the total reported acreage irrigated from the Rio Grande and its tributaries in both countries below El Paso, Texas was 6% greater than that reported for the previous year. There was an increase of 2% on the United States side and a 10% increase in Mexico. The increases on both sides resulted from a moderate expansion in irrigation below Falcón Dam, which more than offset small decreases in the United States above Falcón, and in Mexico, a large decrease (78%) in the Juárez Valley area.

The 1955 investigation of the quality of Rio Grande water extended from El Paso to Mercedes, Texas. The annual tonnage of salts, or total dissolved solids, carried by the river was generally about one-half of normal, except for the reach El Paso to Upper Presidio where it was much below normal. The volume of suspended silt transported by the Rio Grande in 1955 was 158% of average at the Langtry Station and 94% at Eagle Pass.

RIO GRANDE BELOW ELEPHANT BUTTE DAM, NEW MEXICO

DESCRIPTION: Water-stage recorder 3,800 feet below Elephant Butte Dam, and cable with sit-down cable car and winch 100 feet below the recorder. Elephant Butte Dam is 135.1 river miles above the American Dam at El Paso, Texas. The zero of the gage is 4,242.09 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 51 current meter measurements during the year and a continuous record of gage heights. Records marked "Subject to Revision" were furnished by the United States Geological Survey. Records available: January 1915 through December 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. Beginning December 1940, hydroelectric power generation facilities for 27,000 kva were placed in operation at Elephant Butte Dam.

EXTREME FLOWS FROM RECORDS:

Average Flow in Second-Feet

Daily:	Max. 8,220	May 22, 1942	Min. 0	Occasionally
Monthly:	Max. 7,600	May 1942	Min. 2.7	Sept. 1954
Yearly:	Max. 2,510	1942	Min. 293	1955

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.1	3.5	2.8	962	263	558	1,140	214	1,200	78.0	3.1	5.2
2	3.1	3.9	2.8	658	202	565	1,150	238	1,130	46.0	3.1	6.6
3	3.1	3.9	2.8	575	341	573	1,140	215	957	8.8	3.5	5.2
4	3.1	3.9	3.1	613	213	573	1,140	218	742	8.8	3.9	4.7
5	3.1	3.9	2.8	614	206	569	1,120	285	748	4.7	3.9	4.3
6	2.8	3.9	2.8	610	7.0	573	1,150	222	993	3.5	3.5	4.7
7	2.8	3.5	2.8	510	7.0	573	1,150	228	1,240	3.5	3.1	4.7
8	27.0	3.5	70.0	402	7.0	565	1,100	223	1,240	3.9	3.5	4.7
9	45.0	3.5	7.7	398	7.7	774	1,170	217	1,260	3.9	3.9	5.2
10	2.8	2.1	6.1	398	18.0	1,090	1,160	220	1,280	7.7	3.5	5.2
11	2.8	2.5	4.3	418	4.3	1,140	1,170	241	1,280	6.6	3.1	5.6
12	2.8	2.8	4.3	402	3.9	1,140	804	276	543	5.2	2.8	5.2
13	64.0	2.8	4.7	394	3.9	1,150	492	220	8.2	5.2	2.5	79.0
14	3.1	3.1	6.1	393	7.5	1,180	494	282	5.2	6.1	3.1	9.4
15	2.8	3.9	56.0	564	4.3	1,110	500	200	4.7	5.6	3.5	4.7
16	2.8	2.8	59.0	400	3.9	551	502	334	5.2	5.6	2.8	4.3
17	3.5	3.1	66.0	392	4.3	547	504	594	4.3	5.6	2.5	4.3
18	2.8	5.6	115.0	350	3.5	555	526	600	4.7	5.6	2.1	4.7
19	2.8	4.0	12.0	295	3.1	555	538	943	6.1	5.6	12.0	4.7
20	3.5	3.0	950	280	3.1	526	538	900	9.4	5.2	5.2	4.7
21	3.1	7.7	1,050	244	3.5	508	540	999	4.7	3.9	3.9	4.3
22	2.8	3.5	1,130	273	3.9	512	553	1,200	4.3	3.5	3.1	4.7
23	2.8	2.8	1,120	226	3.9	516	552	1,190	4.3	3.1	3.5	4.7
24	2.8	1.8	1,130	242	3.5	870	548	1,200	3.9	3.1	3.5	4.7
25	2.8	2.5	1,120	244	4.3	1,140	259	1,210	3.5	3.9	3.9	5.2
26	1.8	2.8	1,150	240	3.5	1,140	237	1,200	3.9	3.9	3.9	5.2
27	2.5	2.5	1,140	243	2.8	1,140	256	1,200	4.7	3.1	4.3	4.7
28	3.0	1.8	1,090	252	2.5	1,140	216	1,200	4.7	3.1	4.3	5.2
29	3.0		1,130	253	2.8	1,140	222	1,180	11.0	2.8	4.7	5.2
30	3.0		1,110	254	528	1,130	210	1,210	5.2	3.1	4.7	4.7
31	3.9		1,100	555			204	1,200		3.1		4.3
Sum	94.6		12,102	24,103		19,859		261.7		230.0		
	218.3		13,651.1	2,427.2		21,285		12,711.0		114.4		

Current Year 1955

Period 1924-1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Low			Average	Maximum	Minimum
Jan.			13	64.0	26	1.8	7.0	433	26,210	86,500
Feb.			21	7.7	†24	1.8	3.4	188	37,727	83,600
Mar.			26	1,150	† 1	2.8	440	27,100	61,898	95,300
Apr.			1	962	23	226	403	24,000	94,297	162,000
May			31	555	28	2.5	76.3	4,810	97,688	467,000
June			14	1,180	21	508	803	47,800	107,425	363,000
July			† 9	1,170	31	204	687	42,200	106,847	211,000
Aug.			125	1,210	15	200	641	39,400	97,204	161,000
Sept.			† 10	1,280	25	3.5	424	25,200	59,164	129,000
Oct.			1	78.0	29	2.8	8.4	519	25,979	72,100
Nov.			19	12.0	18	2.1	3.8	227	24,881	158,000
Dec.			13	79.0	† 5	4.3	7.4	456	24,851	87,300
Yearly				1,280		1.8	293	212,333	764,171	1,818,800
										212,333

† And other days Ø Mean daily

RIO GRANDE BELOW CABALLO DAM, NEW MEXICO

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located .8 river mile below Caballo Dam, and 106.8 river miles above the American Dam at El Paso, Texas. The zero of the gage is 4,140.90 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 149 meter measurements during the year and a continuous record of gage heights. Records were furnished by the El Paso office of the United States Bureau of Reclamation. Records available: January 1938 through December 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. In addition to the outflow from Caballo Dam listed below, 1,176 acre-feet of water were diverted in 1955 into Bonita Lateral, a small irrigation canal just below Caballo Dam. Prior to 1938, discharge records were kept at Percha Dam, a low diversion dam about 1.5 miles downstream from this station. Small accretions to the river take place between this station and Percha Dam.

EXTREME FLOWS FROM RECORDS:

Average Flow in Second-Feet

Daily:	Max. 7,650	May 20, 1942	Min. .1	Oct. 31-Nov. 14, 1954
Monthly:	Max. 6,710	May 1942	Min. .1	Nov. 7-Dec. 31, 1955
Yearly:	Max. 2,480	1942	Min. 303	Nov. & Dec. 1955

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.4	.3	.2	899	501	.2	1,040	254	1,230	.6	.2	.1
2	.4	.3	.2	778	502	.2	932	473	1,330	.6	.2	.1
3	.3	.3	.2	611	519	.2	832	548	1,540	.6	.2	.1
4	.3	.3	.2	610	625	.2	673	534	1,580	.6	.2	.1
5	.3	.3	.2	589	480	.2	630	634	1,640	.6	.2	.1
6	.3	.2	.2	536	5.0	555	547	786	1,850	.6	.2	.1
7	.3	.2	.2	601	4.0	970	572	762	2,060	.6	.1	.1
8	.3	.2	.2	685	3.0	974	705	681	2,120	.5	.1	.1
9	.3	.2	.2	705	2.0	1,110	818	630	2,240	.4	.1	.1
10	.3	.2	.2	651	1.3	1,210	855	650	2,090	.3	.1	.1
11	.3	.2	.2	607	1.1	1,040	732	691	1,820	.3	.1	.1
12	.3	.2	.2	594	1.0	1,010	254	676	840	.3	.1	.1
13	.4	.2	.2	594	.9	1,010	7.0	504	138	.3	.1	.1
14	.4	.3	.2	671	.8	964	137	452	40	.3	.1	.1
15	.4	.3	.2	839	.7	846	540	379	3.2	.3	.1	.1
16	.4	.3	.2	690	.6	578	844	587	2.3	.3	.1	.1
17	.3	.3	.2	542	.6	451	888	865	2.3	.3	.1	.1
18	.3	.3	.2	490	.5	453	780	981	2.1	.3	.1	.1
19	.3	.3	.2	438	.5	454	648	1,040	1.9	.3	.1	.1
20	.3	.2	815	394	.4	483	511	987	1.3	.3	.1	.1
21	.3	.2	1,470	361	.4	515	308	921	1.1	.3	.1	.1
22	.3	.2	1,430	244	.4	584	225	915	1.0	.3	.1	.1
23	.3	.2	1,250	184	.3	588	183	930	.9	.2	.1	.1
24	.3	.2	1,350	153	.3	478	9.0	923	.8	.2	.1	.1
25	.3	.2	1,480	119	.3	440	111	923	.8	.2	.1	.1
26	.3	.2	1,450	120	.3	461	193	1,060	.7	.2	.1	.1
27	.3	.2	1,360	108	.3	697	17.0	1,140	.7	.2	.1	.1
28	.3	.2	1,210	124	.3	859	7.0	1,200	.6	.2	.1	.1
29	.3	1,060	318	.2	932	4.0	1,190	.6	.2	.1	.1	.1
30	.3	1,050	500	.2	1,000	67.0	1,190	1,200	.6	.2	.1	.1
31	.3	1,010			.2		134			.2		
Sum			6.7	14,755		2,652.6	18,663.0	24,706	10.8		3.1	
			9.9	14,938.8			14,203.0	20,538.9		3.6		

Month	Current Year 1955						Period 1938-1955		
	Extreme Gage Feet		Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High			Day	Average	Maximum
Jan.				† 1	.4	.3	.3	20.0	895 4,850 20.0
Feb.				† 1	.3	.6	.2	13.0	13,727 64,300 13.0
Mar.	25	1,480		† 1	.2	482	29,600	74,661	120,000 29,600
Apr.	1	899	27	108	492	29,300	105,378	212,000	29,300
May	4	625	† 29	.2	85.6	5,260	98,726	412,000	5,260
June	10	1,210	† 1	.2	622	37,000	117,194	354,000	37,000
July	1	1,040	29	4.0	458	28,200	121,650	234,000	28,200
Aug.	† 28	1,200	1	254	797	49,000	118,628	179,000	20,500
Sept.	9	2,240	† 28	.6	685	40,700	59,341	181,000	7,730
Oct.	† 1	.6	123	.2	.3	21.0	9,213	35,400	15.5
Nov.	† 1	.2	† 7	.1	.1	7.0	4,909	14,400	7.0
Dec.	† 1	.1	† 1	.1	.1	6.0	5,092	19,100	6.0
Yearly				2,240		.1	303	219,127.0	729,414 1,795,670 219,127.0

† And other days Ø Mean daily

RIO GRANDE AT EL PASO, TEXAS

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights. The recorder is located 5 miles northwest of El Paso, Texas, 6 miles northwest of Juárez, Chihuahua, and 1.9 river miles above the American Dam. The cable and staff gage are located 1 mile downstream from the recorder in the pass opposite Courchesne Quarry. The zeros of the gages at the recorder and at the cable are 3,722.30 feet and 3,720.51 feet, respectively, above mean sea level, U.S.C. & G.S. datum.

RECORDS: Discharges in 1955 were computed by taking the sum of the flows in the American Canal and the flows at the river station below American Dam. Records available: 1889 through December 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 24,000 second-feet on June 12, 1905, with a gage height of 6.0 feet at the lower gage. Min. occasionally no flow. Since Elephant Butte Dam was closed in 1915, the largest peak flow to pass this station was 13,500 second-feet on September 3, 1925.

Average Flow in Second-Feet

Daily:	Max. 23,680	June 12, 1905	Min. 0	Occasionally
Monthly:	Max. 14,300	June 1905	Min. 0	Occasionally
Yearly:	Max. 2,780	1905	Min. 70.1	1902

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.9	7.5	3.0	314	* 7.0	.3	230	32.4	335	28.0	21.0	5.0
2	8.5	7.6	4.6	280	* 7.0	.3	271	25.0	347	29.2	21.1	2.2
3	9.0	7.1	3.1	187	61.3	2.3	252	21.0	365	29.2	21.7	1.4
4	9.9	6.6	.7	163	154	3.3	235	21.0	330	24.0	21.6	1.9
5	9.2	6.3	.6	162	158	3.3	122	67.9	346	39.3	* 12.9	2.2
6	9.5	8.1	.8	152	214	3.3	140	162	331	40.9	3.1	4.7
7	9.3	7.6	.7	76.1	211	3.3	140	211	340	20.3	3.1	5.8
8	9.1	6.1	1.8	64.0	162	3.3	147	283	471	19.6	* 3.4	5.7
9	8.4	6.1	2.6	65.6	33.1	2.3	143	236	614	22.6	4.7	5.6
10	7.6	4.7	.4	172	8.9	6.8	142	225	649	25.5	4.7	6.1
11	8.0	4.9	2.7	258	" 3.3	92.9	173	147	754	24.6	4.4	6.2
12	6.6	5.2	2.7	296	" 3.6	362	313	86.3	675	23.3	4.1	6.3
13	6.8	6.1	4.3	296	" 3.6	337	203	121	546	23.1	4.9	6.7
14	8.8	6.1	4.6	225	" 3.5	342	209	31.8	405	23.6	5.4	5.8
15	9.6	5.2	3.3	251	" 3.5	354	58.1	20.9	91.5	24.3	4.5	5.7
16	10.4	3.1	1.9	303	" 3.4	331	21.7	22.8	42.8	23.8	4.5	4.6
17	10.1	4.7	2.8	317	" 3.4	262	20.3	22.4	24.0	24.2	4.2	2.0
18	8.7	3.4	3.6	378	" 3.4	163	77.9	25.8	21.6	22.7	2.1	1.8
19	10.7	5.4	3.4	279	" 1.4	103	154	144	17.7	23.0	1.8	2.3
20	8.9	4.8	3.6	247	" 2.4	90.0	899	308	19.6	22.7	2.3	1.8
21	9.2	4.3	3.4	199	" 2.4	61.3	1,200	367	22.5	22.5	2.9	4.5
22	9.0	4.3	4.7	183	" 2.4	65.0	300	346	22.8	22.5	2.0	4.7
23	8.7	2.7	49.5	173	" 2.3	74.5	400	372	23.9	23.0	3.1	4.7
24	8.5	2.3	154	162	" 2.3	74.5	526	354	24.4	22.7	4.4	4.2
25	8.6	3.2	121	64.4	" 2.8	70.7	456	360	22.8	21.8	4.7	4.6
26	9.0	3.3	190	18.9	" 3.3	68.5	255	329	17.5	17.6	4.4	4.8
27	8.9	3.0	319	* 8.0	" 3.3	29.9	87.5	328	19.5	16.7	5.2	4.8
28	8.3	3.0	342	* 6.1	" 2.8	19.7	34.4	348	23.6	17.9	5.0	5.2
29	6.6		363	* 6.1	" 2.3	19.3	227	390	24.3	22.1	4.7	5.2
30	6.0		372	* 7.2	" 2.3	88.6	79.4	346	26.0	21.7	5.0	5.5
31	8.1		340		" 1.3	29.5	334			22.0		5.1
Sum	142.7		5,313.4	3,037.4		6,088.3		744.4		137.1		
	268.9		2,309.8	1,075.3		7,545.8		6,952.5		196.9		

Current Year 1955

Month	Extreme Gage			Extreme Second-Feet		Average Second- Feet	Total	Period 1924-1955				
	Extreme Gage							Acre-Feet				
	Feet **	Day	High	Low	Day			Average	Maximum	Minimum		
Jan.	2.06	1.96	1	11.9	30	4.9	8.7	533	17,500	533		
Feb.	2.10	1.78	† 7	9.2	27	1.2	5.1	283	16,243	52,200		
Mar.	3.76	1.65	30	398	7	0	74.5	4,580	36,356	62,500		
Apr.	3.76	1.91	18	391	29	5.6	177	10,500	59,635	139,000		
May	3.45	1.89	6	304	+23	.3	34.7	2,130	66,984	357,000		
June	3.85	1.80	12	380	† 1	0	101	6,020	69,129	304,000		
July	7.22	2.09	20	4,800	18	18.5	243	15,000	75,891	198,000		
Aug.	4.59	1.92	21	724	15	13.2	196	12,100	78,161	158,000		
Sept.	5.26	1.80	11	799	20	16.1	232	13,800	57,069	171,000		
Oct.	2.71	1.70	5	108	27	15.6	24.0	1,480	22,974	57,900		
Nov.	1.82	1.68	2	22.9	19	1.8	6.6	391	15,042	29,500		
Dec.	1.85	1.67	13	6.9	+ 3	1.2	4.4	272	14,133	27,700		
Yearly	7.22	1.65		4,800		0	92.7	67,089	521,589	1,559,200		
										67,089		

^{**} Estimated * Partly estimated † And other days Ø Mean daily ** Gage heights as actually observed at El Paso Station recorder

RIO GRANDE BELOW AMERICAN DAM

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located 3,200 feet below the American Dam and 1.5 miles above the International Dam, west of El Paso, Texas. The American Dam is 1,241.4 river miles above the Gulf of Mexico. The zero of the gage is 3,712.30 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 48 meter measurements and frequent estimates by hydrographer at extreme low flows during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: June 1938 through December 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The operation of the American Dam began June 2, 1938. At this dam, part of the flow passing the El Paso gaging station is diverted into the American Canal (see records of "Diversions from the Rio Grande") and the remainder, including excess flood flows, passes this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 6,770 second-feet on May 18, 1942, with a gage height of 9.77 feet. Min. no flow occurred on March 23, 1955.

Average Flow in Second-Feet

Daily:	Max. 6,040	May 20, 1942	Min. .1	Several days 1954 & 1955
Monthly:	Max. 4,880	May 1942	Min. .5	Nov. 1954
Yearly:	Max. 1,510	1942	Min. 19.7	1955

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.9	7.5	3.0	2.4	4.0	.3	.4	.8	125	1.4	.1	5.0
2	8.5	7.6	4.6	2.2	4.0	.3	.7	.7	114	.8	.2	2.2
3	9.0	7.1	3.1	1.6	3.3	.3	.7	.7	105	.6	.3	1.4
4	9.9	6.6	.7	1.6	2.5	.3	.6	.7	110	1.3	.2	1.9
5	9.2	6.3	.6	1.8	2.2	.3	.3	.6	112	.8	.1	2.2
6	9.5	8.1	.8	1.8	1.8	.3	.2	1.0	110	.6	.1	4.7
7	9.3	7.6	.7	.9	1.2	.3	.2	.9	110	.4	.1	5.8
8	9.1	6.1	1.8	.7	.5	.3	.4	1.1	110	.6	2.3	5.7
9	8.4	6.1	2.6	.9	.3	.3	.4	.8	112	.4	4.7	5.6
10	7.6	4.7	.4	116	.3	.3	.6	.7	66.0	.3	4.7	6.1
11	8.0	4.9	2.7	215	.3	.3	.8	.6	66.0	.4	4.4	6.2
12	6.6	5.2	2.7	209	.6	.5	3.7	.4	35.9	.6	4.1	6.3
13	6.8	6.1	4.3	192	.6	1.0	.6	.4	15.5	1.3	4.9	6.7
14	8.8	6.1	4.6	178	.5	2.5	.3	.3	14.0	1.4	5.4	5.8
15	9.6	5.2	3.3	205	.5	2.3	.2	.2	*	9.0	1.2	4.5
16	10.4	3.1	1.9	198	.4	2.3	.2	.2	"	5.0	.8	4.6
17	10.1	4.7	2.8	176	.4	1.5	.1	.4	"	1.0	.7	4.2
18	8.7	3.4	3.6	178	.4	1.0	.2	.5	"	.4	.6	1.8
19	10.7	5.4	3.4	188	.4	.4	1.5	.9	"	.4	.4	2.3
20	8.9	4.8	3.6	189	.4	.3	752	2.1	"	.4	.6	1.8
21	9.2	4.3	3.4	190	.4	.3	853	87.3	.4	.4	2.9	4.5
22	9.0	4.3	4.5	73.4	.4	.3	98.0	8.8	.3	.4	2.0	4.7
23	8.7	2.7	3.7	22.7	.3	.2	187	6.6	.3	.4	3.1	4.7
24	8.5	2.3	5.1	23.4	.3	.2	133	6.4	.3	.6	4.4	4.2
25	8.6	3.2	4.4	15.8	.3	.3	85.0	6.2	.3	.6	4.7	4.6
26	9.0	3.3	4.2	8.7	.3	.2	4.4	4.7	.2	.6	4.4	4.8
27	8.9	3.0	2.6	4.0	.3	.4	3.5	2.6	.2	.2	5.2	4.8
28	8.3	3.0	2.3	3.1	.3	.3	6.2	75.7	.5	.2	5.0	5.2
29	6.6	2.4	3.1	3.1	.3	.3	4.0	138	.5	.2	4.7	5.2
30	6.0	2.5	4.2	3	.3	1.4	135	121	.5	.2	5.0	5.5
31	8.1	2.2			.3		1.0			.2		5.1
Sum		142.7	88.5	2,406.3	28.1	17.9	2,140.6	606.3	1,225.1	19.2	92.4	137.1

Month	Current Year 1955			Period June 1938-1955					
	Extreme Gage		Extreme Second-Feet		Average	Total	Acre-Feet		
	High	Low	Day	High	Low	Second-Feet	Acre-Feet	Average	Maximum
Jan.	4.42	4.30	1	11.9	30	4.9	8.7	533	7,389
Feb.	4.37	4.08	† 7	9.2	27	1.2	5.1	283	4,394
Mar.	4.51	23		17.8	23	0	2.9	176	2,948
Apr.	5.63	4.04	11	245	8	.6	80.2	4,770	10,717
May	4.32		† 1	4.0	† 9	.3	.9	55.7	27,899
June	4.32		14	3.9	† 22	.2	.6	35.5	23,753
July	10.16	4.17	20	4,800	† 17	.1	69.1	4,250	19,601
Aug.	8.20	4.35	21	438	† 16	.2	19.6	1,200	17,130
Sept.	6.83	5.02	1	135	† 26	.2	40.8	2,430	16,280
Oct.	5.34	4.96	1	2.6	31	.1	.6	38.1	3,315
Nov.	5.58	4.95	† 14	6.0	† 1	.1	3.1	183	2,378
Dec.	5.58	5.20	13	6.9	† 3	1.2	4.4	272	1,529
Yearly	10.16			4,800		0	19.7	14,226.3	137,333
								1,093,553	14,226.3

* Estimated * Partly estimated † And other days

RIO GRANDE AT JUAREZ, CHIHUAHUA

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located 2.9 river miles downstream from El Paso, Texas and Juárez, Chihuahua. This station is 7.0 river miles below the American Dam at El Paso, Texas and 4.9 river miles below the International Dam. The zero of the gage is 3,683.98 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 132 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: April 1938 through December 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 7,630 second-feet on July 21, 1955, with a gage height of 9.88 feet. Min. 2.5 second-feet on August 3, 1955, with a gage height of 2.03 feet.

Average Flow in Second-Feet

Daily:	Max. 6,460	May 20, 1942	Min. 9.2	May 24, 1954
Monthly:	Max. 5,290	May 1942	Min. 17.4	1955
Yearly:	Max. 1,820	1942	Min. 33.6	1955

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	20.5	22.6	21.2	26.8	17.0	18.7	19.4	26.1	26.8	21.2	19.4	17.0
2	18.0	24.0	16.6	16.2	18.4	19.8	16.6	13.1	26.8	18.0	19.4	16.2
3	23.3	23.7	16.2	13.8	24.4	18.4	13.8	16.2	26.8	26.1	19.4	17.0
4	23.3	23.0	20.5	17.3	21.9	*	17.3	14.8	16.2	17.7	36.0	19.4
5	20.5	22.6	17.3	17.0	24.0	*	15.9	18.0	17.3	35.7	17.3	19.1
6	20.5	19.4	17.0	16.6	23.3	*	23.3	19.1	17.3	24.0	32.5	15.2
7	23.3	21.5	16.6	17.7	25.1	*	22.2	20.1	13.8	29.7	31.4	17.3
8	20.5	22.2	20.5	18.4	18.0	*	21.5	21.2	18.0	27.5	32.8	21.9
9	20.5	22.6	22.6	19.4	21.5	*	21.2	19.8	16.6	134	18.0	19.4
10	23.3	19.4	23.0	16.2	21.2	*	20.8	20.1	16.6	244	20.1	18.7
11	23.3	19.1	20.5	18.4	20.8	*	20.8	23.7	16.2	388	20.1	18.0
12	20.5	18.4	21.2	18.0	20.5	*	30.4	129	15.5	341	20.1	17.3
13	23.3	22.2	18.4	17.7	20.5	*	33.9	40.6	16.2	210	21.5	20.5
14	23.3	20.8	17.7	17.3	20.1	*	27.5	21.9	14.8	152	24.0	17.3
15	26.1	20.5	21.9	17.3	15.5	*	23.0	21.9	17.7	13.4	20.8	20.8
16	18.0	22.6	23.3	17.0	20.1	*	21.5	19.4	18.7	9.5	15.9	17.3
17	21.2	22.2	15.9	16.2	20.1	*	19.8	20.8	17.7	25.8	20.1	19.8
18	24.0	19.1	15.9	17.0	19.8	*	20.5	22.2	17.3	25.8	20.1	18.0
19	24.4	16.2	13.4	17.7	19.4	*	20.1	21.2	23.7	27.5	20.8	20.5
20	21.5	15.9	13.4	18.7	21.9	*	24.7	*	412	216	27.9	19.4
21	24.4	17.3	15.2	17.3	18.7	*	18.4	2,120	127	26.5	20.5	17.3
22	24.7	19.8	18.7	16.2	17.0	*	22.2	18.0	47.7	24.4	20.5	19.4
23	24.0	21.9	20.5	19.8	20.1	*	21.9	12.7	39.9	27.2	17.7	17.3
24	26.5	19.4	24.0	23.0	21.5	*	26.8	*	41.3	22.2	17.0	15.2
25	22.2	19.8	17.7	26.1	20.5	*	29.0	69.6	29.0	19.1	20.5	14.8
26	24.0	19.8	18.4	22.2	19.1	*	20.1	80.5	*	12.7	21.5	15.2
27	23.7	18.0	25.4	18.7	20.1	*	19.8	52.6	*	18.4	24.7	12.7
28	23.3	20.8	62.9	20.8	18.7	*	20.5	86.9	*	30.7	29.0	18.4
29	20.5		62.9	20.5	17.0	*	20.8	92.9	*	23.0	27.2	19.4
30	20.5		120	18.0	20.1	*	20.1	37.8	*	20.1	25.1	17.3
31	20.5		44.5		18.4	*		15.2	*	21.2	19.4	18.4
Sum	574.8	557.3	624.7	660.9	956.0		685.8	581.9				
	693.6	803.3					* 3,577.4		2,042.1	521.1		

Current Year 1955										Period Apr. 1938-1955		
Month	Extreme Gage Feet			Extreme Second-Feet			Average Second-Feet	Total Acre-Feet	Acre-Feet			
	High	Low	Day	High	Low	Day			Average	Maximum	Minimum	
Jan.	2.79	2.39	15	44.5	19	14.1	22.4	1,380	8,975	13,270	1,380	
Feb.	2.62	2.36	† 1	29.7	† 4	10.2	20.5	1,140	8,612	42,690	1,140	
Mar.	3.87	2.23	30	480	† 19	0	13.4	1,590	22,382	45,790	1,590	
Apr.	2.69	2.26	25	39.2	† 3	6.4	18.6	1,110	34,662	111,500	1,110	
May	3.08	2.33	3	113	† 8	8.1	20.2	1,240	39,379	325,100	1,240	
June	2.82	2.36	13	50.5	2	8.5	22.0	1,310	42,820	272,400	1,310	
July	9.88	2.36	21	7,630	3	9.9	* 115	*	7,100	43,831	162,500	
Aug.	6.92	2.03	20	2,020	3	2.5	30.8	1,900	42,343	127,300	1,900	
Sept.	4.27	2.13	11	427	16	6.4	68.1	4,050	31,339	143,800	1,350	
Oct.	2.79	2.07	5	67.1	24	5.3	22.1	1,360	13,938	45,390	1,360	
Nov.	2.69	2.13	8	42.0	22	3.2	17.4	1,030	7,582	13,670	1,030	
Dec.	2.53	2.17	† 12	29.3	3	3.9	18.8	1,150	7,871	18,060	1,150	
Yearly	9.88	2.03		7,630		2.5	33.6	24,360	303,734	1,315,890	24,360	

^u Estimated * Partly estimated † And other days Ø Mean daily

RIO GRANDE AT ISLAND STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located near Clint, Texas and San Agustín, Chihuahua. This station is on the rectified channel of the Rio Grande, 27.1 river miles below the American Dam at El Paso, Texas. The zero of the gage is 3,608.99 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 11 meter measurements during the year, 10 by the United States and 1 by the Mexican Section of this Commission, and a continuous record of gage heights. Computations by shifting channel methods. Records available: August 17, 1938 through December 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 6,490 second-feet on May 19, 1942, with a gage height of 16.06 feet. Min. frequently no flow.

Average Flow in Second-Feet

Daily:	Max. 6,140	May 19, 1942	Min. 0	Frequently
Monthly:	Max. 4,880	May 1942	Min. 0	Frequently
Yearly:	Max. 1,490	1942	Min. * 4.5	1955

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.7	16.1	0	0	0	0	0	0	0	0	0	0
2	6.5	16.8	0	0	0	0	0	0	0	0	0	0
3	7.9	3.9	0	0	0	0	0	0	0	0	0	0
4	9.9	0	0	0	0	0	0	0	0	0	0	0
5	11.3	0	0	0	0	0	0	0	0	0	0	0
6	11.8	0	0	0	0	0	0	0	0	0	0	0
7	12.7	0	0	0	0	0	0	0	0	0	0	0
8	14.0	0	0	0	0	0	0	0	0	0	0	0
9	14.5	0	0	0	0	0	0	0	0	0	0	0
10	* 14.7	0	0	0	0	0	0	0	0	0	0	0
11	* 14.9	0	0	0	0	0	0	0	" .3	0	0	0
12	* 15.1	0	0	0	0	0	0	0	" .6	0	0	0
13	* 15.4	0	0	0	0	0	0	0	" .6	0	0	0
14	* 15.9	0	0	0	0	0	0	0	" .6	0	0	0
15	* 16.2	0	0	0	0	0	0	0	" .3	0	0	0
16	* 16.4	0	0	0	0	0	0	0	0	0	0	0
17	* 16.7	0	0	0	0	0	0	0	0	0	0	0
18	* 16.9	0	0	0	0	0	0	0	0	0	0	0
19	* 17.2	0	0	0	0	0	0	0	0	0	0	0
20	* 16.1	0	0	0	0	0	0	0	0	0	0	0
21	* 14.9	0	0	0	0	0	* 1,110	45.3	0	0	0	0
22	* 13.8	0	0	0	0	0	" 1.7	" .6	0	0	0	0
23	* 14.4	0	0	0	0	0	" 1.2	" .6	0	0	0	0
24	* 15.0	0	0	0	0	0	" 1.2	" .6	0	0	0	0
25	* 15.5	0	0	0	0	0	" 1.2	" .6	0	0	0	0
26	* 16.1	0	0	0	0	0	1.6	" .6	0	0	0	0
27	* 16.5	0	0	0	0	0	" .8	" .6	0	0	0	0
28	16.6	0	0	0	0	0	0	" .6	0	0	0	0
29	16.6	0	0	0	0	0	0	* 1.1	0	0	0	0
30	16.3	0	0	0	0	0	0	0	0	0	0	0
31	15.2	0	0	0	0	0	0	0	0	0	0	0
Sum	* 440.7	36.8	0	0	0	0	* 1,117.7	50.6	" 2.4	0	0	0

Current Year 1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Acre-Feet				
	High	Low	Day	High	Low			Average	Maximum	Minimum		
Jan.	9.60	8.78	19	27.5	1	2.0	* 14.2	* 874	7,156	11,900		
Feb.	9.45		2	19.6	† 3	0	1.3	73.0	5,492	37,000		
Mar.				0		0	0	0	3,700	21,000		
Apr.				0		0	0	0	6,760	70,500		
May				0		0	0	0	19,987	299,800		
June				0		0	0	0	16,894	241,000		
July	* 13.67		21	* 3,660	† 1	0	* 36.1	* 2,220	13,109	* 118,500		
Aug.	10.89		21	303	† 1	0	1.6	100	11,958	99,400		
Sept.			† 12	" .6	† 1	0	" .1	" 4.8	13,938	* 119,200		
Oct.				0		0	0	0	6,298	42,800		
Nov.				0		0	0	0	1,493	7,270		
Dec.				0		0	0	0	2,893	12,900		
Yearly	* 13.67			* 3,660		0	* 4.5	* 3,271.8	109,678	1,079,340		
										* 3,271.8		

^a Estimated * Partly estimated † And other days

RIO GRANDE AT COUNTY LINE STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located .8 mile downstream from the El Paso-Hudspeth county line. This station is on the rectified channel of the Rio Grande 47.3 river miles below the American Dam at El Paso, Texas. The zero of the gage is 3,547.59 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 1 current meter measurement during the year made near the crest of flow on July 21 and a continuous record of gage heights. Flow occurred on only 3 days during the year. Records available: January 1938 through December 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 6,340 second-feet on May 19, 1942, with a gage height of 8.66 feet. Min. frequently no flow.

Average Flow in Second-Feet

Daily:	Max. 6,180	May 18, 1942	Min. 0	Frequently
Monthly:	Max. 4,920	May 1942	Min. 0	Frequently
Yearly:	Max. 1,720	1942	Min. .5	1952, 1954 & 1955

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	2.3	0	0	0	0
21	0	0	0	0	0	0	156	0	0	0	0	0
22	0	0	0	0	0	0	25.1	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0
Sum	0	0	0	0	0	0	181.1	2.3	0	0	0	0

Current Year 1955

Period 1938-1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total	Acre-Feet		
	High	Low	Day	High	Low			Acre-Feet	Average	Maximum
Jan.				0	0	0	0	10,999	20,000	0
Feb.				0	0	0	0	9,500	47,900	0
Mar.				0	0	0	0	8,328	38,900	0
Apr.				0	0	0	0	12,602	84,200	0
May				0	0	0	0	24,290	303,000	0
June				0	0	0	0	21,457	239,000	0
July	4.82		21	640	† 1	0	5.8	359	19,696	140,000
Aug.	2.60		20	11.1	† 1	0	.1	4.6	18,803	123,000
Sept.				0	0	0	0	21,490	140,000	0
Oct.				0	0	0	0	14,330	61,400	0
Nov.				0	0	0	0	9,682	20,400	0
Dec.				0	0	0	0	10,666	29,700	0
Yearly	4.82			640	0	.5	363.6	181,843	1,247,500	347.5

† And other days

RIO GRANDE AT FORT QUITMAN, TEXAS

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located on the rectified channel of the Rio Grande 1.5 miles below Old Fort Quitman, and 81.1 river miles below the American Dam at El Paso, Texas. The zero of the gage is 3,450.57 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 8 meter measurements during the year, 7 by the United States and 1 by the Mexican Section of this Commission, and a continuous record of gage heights. Computations by shifting channel methods. Records available: January 1889 through December 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 10,600 second-feet on October 5, 1946, with a gage height of 10.00 feet. Min. frequently no flow.

Average Flow in Second-Feet

Daily:	Max. 5,890	May 19, 1942	Min. 0	Frequently
Monthly:	Max. 5,030	May 1942	Min. 0	Several months 1952 & 1955
Yearly:	Max. 1,750	1942	Min. * 8.1	1955

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.7	.5	.3	0	0	0	0	0	0	0	.4	.4
2	.7	.5	.3	0	0	0	0	1.0	0	0	.4	.4
3	.7	.5	.3	0	0	0	0	0	0	* 843	.4	.4
4	.6	.5	.3	0	0	0	0	0	0	* 373	.4	.4
5	.6	.5	.3	0	.1	0	0	0	0	* 175	.4	.4
6	.6	.4	.3	0	.1	0	0	13.8	0	* 51.7	.4	.4
7	.6	.4	.3	0	.1	0	0	11.4	0	* 10.0	.3	.3
8	.5	.4	.3	0	0	0	1.2	.3	0	* 5.0	.3	.3
9	.5	.4	.3	0	0	0	.2	0	0	0	.4	.3
10	.5	.4	.3	0	0	0	0	0	0	0	.4	.3
11	.5	.4	.3	0	0	0	41.2	0	0	0	.4	.4
12	.5	.4	.2	0	0	0	44.1	0	0	0	.4	.4
13	.5	.3	.2	0	0	0	0	0	0	0	.4	.4
14	.5	.3	.2	0	0	0	0	0	0	0	.4	.4
15	.5	.3	.2	0	0	0	0	0	0	0	.4	.4
16	.5	.3	.2	0	0	0	0	0	0	0	.4	.4
17	.5	.3	.2	0	0	0	0	0	0	0	.4	.4
18	.5	.3	.2	0	0	0	1.4	0	0	0	.4	.4
19	.5	.3	.2	0	0	0	2.2	44.8	0	0	.4	.4
20	.5	.3	.1	0	0	0	.2	27.6	173	0	.4	.4
21	.5	.3	0	0	0	0	18.6	63.9	0	0	.4	.4
22	.5	.3	0	0	0	0	14.4	1.5	0	0	.3	.4
23	.5	.3	0	0	0	0	2.0	9.5	0	0	.4	.4
24	.5	.3	0	0	0	0	0	3.9	0	0	.4	.4
25	.5	.3	0	0	0	0	0	53.1	0	0	.4	.4
26	.5	.3	0	0	0	0	26.2	4.4	32.8	.4	.4	.4
27	.5	.3	0	0	0	0	529	0	238	.4	.4	.4
28	.5	.3	0	0	0	0	40.0	30.7	* 19.0	.4	.4	.4
29	.5	0	0	0	0	0	0	1.6	0	.4	.4	.4
30	.5	0	0	0	0	0	0	0	0	.4	.4	.4
31	.5	0	0	0	0	0	0	0	0	.4	.4	.4
Sum	16.5	10.1	5.0	0	.3	0	1.9	748.1	359.8	342.9	* 1,464.1	11.7
												12.0

Current Year 1955

Period 1924-1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Low			Average	Maximum	Minimum
	High	Low	Day	Day		Acre-Feet	Average	Maximum	Minimum	
Jan.	3.62	3.57	† 1	.7	.5	.5	32.7	11,411	20,900	32.7
Feb.	3.59	3.52	† 3	.5	† 19	.4	20.0	11,310	50,100	20.0
Mar.	3.55	† 1	.3	† 21	0	.2	9.9	9,372	38,900	9.9
Apr.				0	0	0	0	11,643	* 77,000	0
May	3.53	† 5	0	.1	† 1	0	.6	21,130	309,000	0
June	3.92	27	11.0	† 1	0	.1	3.8	19,239	240,000	3.8
July	7.62	2,380	† 1	0	24.1	1,480	20,082	140,000	973	
Aug.	7.64	20	2,400	† 1	0	11.6	714	24,670	* 127,000	185
Sept.	5.15	27	630	† 1	0	11.4	680	27,805	147,000	* 108
Oct.	8.00	3	2,900	† 1	0	* 47.2	* 2,900	20,649	66,500	51.6
Nov.	3.52	3.44	† 1	0	† 7	0	.3	23.2	13,224	24,500
Dec.	3.52	0	0	0	0	.4	23.8	13,690	31,000	23.8
Yearly	8.00			2,900		0	* 8.1	* 5,888.0	204,225	1,270,400
										* 5,888.0

^a Estimated * Partly estimated † And other days 0 Mean daily

RIO GRANDE AT UPPER PRESIDIO STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located 7.8 river miles above the confluence of the Rio Conchos, about 10 miles northwest of Presidio, Texas and Ojinaga, Chihuahua, and 285.7 river miles below the American Dam at El Paso, Texas. The zero of the gage is 2,576.66 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 25 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: January 1889 through December 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 14,000 second-feet on June 14, 1905. A gage height of 10.57 feet was recorded on May 26, 1942, with a flow of 5,160 second-feet. This level was the highest reached during the years 1923-1955, inclusive. Min. frequently no flow.

Average Flow in Second-Feet

Daily:	Max. 13,700	June 13 & 14, 1905	Min. 0	Frequently
Monthly:	Max. 10,150	June 1905	Min. 0	Frequently
Yearly:	Max. 1,970	1907	Min. 12.5	1953

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	* 40.6	184	174	.5	0
2	0	0	0	0	0	0	31.5	27.7	9.4	188	.4	0
3	0	0	0	0	0	0	2.3	14.1	3.2	125	.2	0
4	0	0	0	0	0	0	0	10.2	.6	825	.2	0
5	0	0	0	0	0	0	0	12.8	.4	898	.2	0
6	0	0	0	0	0	0	0	35.8	0	729	.1	0
7	0	0	0	0	0	0	0	15.2	0	686	.1	0
8	0	0	0	0	0	0	0	30.0	0	754	.1	0
9	4.8	0	0	0	0	0	0	83.7	0	665	.1	0
10	14.6	0	0	0	0	0	0	32.3	0	164	.1	0
11	1.8	0	0	0	0	0	0	51.2	0	85.5	.1	0
12	.1	0	0	0	0	0	0	49.8	0	* 56.2	.1	0
13	0	0	0	0	0	0	0	184	0	* 40.8	.1	0
14	0	0	0	0	0	0	0	* 79.1	0	* 20.0	.1	0
15	0	0	0	0	0	0	0	* 41.0	0	19.9	.1	0
16	0	0	0	0	0	0	0	44.5	5.4	17.8	0	0
17	0	0	0	0	0	0	0	10.2	476	8.4	0	0
18	0	0	0	0	0	0	.4	.2	220	4.4	0	0
19	0	0	0	0	0	0	55.3	2.9	28.9	2.7	0	0
20	0	0	0	0	0	0	127	.1	2.2	2.6	0	0
21	0	0	0	0	0	0	0	29.6	.8	2.5	0	0
22	0	0	0	0	0	0	0	103	0	2.1	0	0
23	0	0	0	0	0	0	0	367	0	1.6	0	0
24	0	0	0	0	0	0	0	* 140	750	1.5	0	0
25	0	0	0	0	0	0	0	* 25.8	855	.7	0	0
26	0	0	0	0	0	0	0	3.4	117	.5	0	0
27	0	0	0	0	0	0	3.1	138	1.1	.6	0	0
28	0	0	0	0	0	0	111	212	.6	67.1	0	0
29	0	0	9.3	0	0	0	0	146	0	184	.8	0
30	0	0	.1	0	0	0	0	242	47.6	471	.5	0
31	0	0	0	0	0	0	0	174	548	.5	0	0
Sum	21.3	0	0	9.4	0	114.1		2,031.5	5,477.6	2.5	0	
								1,128.5	3,441.4			

Month	Extreme Gage Feet			Current Year 1955			Period 1924-1955				
	Extreme Gage		Day	Extreme Second-Feet		Day	Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low		High	Low				Average	Maximum	Minimum
Jan.	3.94	9	84.3	† 1	0	0	.7	42.2	10,637	24,400	0
Feb.			0		0	0	0	0	9,851	40,800	0
Mar.			0		0	0	0	0	7,807	39,100	0
Apr.	4.28	29	114	† 1	0	.3	18.6	6,424	41,600	0	
May		0	0		0	0	0	0	15,395	240,000	0
June	6.84	28	378	† 1	0	3.8	226	15,147	216,000	* 218	
July	10.45	27	694	† 1	0	36.4	2,240	20,985	158,000	* 13.1	
Aug.	10.80	31	735	† 19	0	65.5	4,030	27,222	133,000	120	
Sept.	12.63	25	1,010	† 6	0	115	6,830	30,407	* 151,000	0	
Oct.	12.36	4	960	† 27	0	177	10,900	26,219	105,000	0	
Nov.	4.10	1	9	.5	† 16	0	.1	5.0	12,388	34,500	0
Dec.			0		0	0	0	0	12,034	30,900	0
Yearly	12.63		1,010		0	33.6	24,291.8	194,516	1,176,700	9,085	

* Partly estimated † And other days Ø Mean daily

RIO CONCHOS AT CUCHILLO PARADO, CHIHUAHUA

DESCRIPTION: Water-stage recorder and cable with cable car, located in Salineta Canyon, 3.1 miles north of the town of Cuchillo Parado, Chihuahua, 28.6 air-line miles westward from Ojinaga, Chihuahua, and 49.1 river miles above the confluence of the Río Conchos with the Río Grande. This confluence is 293.5 river miles below the American Dam at El Paso, Texas. The zero of the gage is 2,914.23 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 108 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: January 1, 1945 through August 1955.

REMARKS: The flow of this stream is modified by irrigation diversions and drainage returns and by the operation of La Rosettilla, La Colina, and La Boquilla reservoirs situated 139, 194, and 202 river miles, respectively, above this station and also by Madero Reservoir on the Río San Pedro, 145 river miles above this station. On September 3, 1955, operation of this station was discontinued and discharge records for Río Conchos were computed at Ojinaga Station. See Page 15.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 39,200 second-feet on July 12, 1952, with a gage height of 17.19 feet. Min. .7 second-foot on July 13, 1953, with a gage height of 2.30 feet.

Average Flow in Second-Feet

Daily:	Max. 19,950	July 13, 1952	Min. .7	July 13, 1953
Monthly:	Max. 3,580	Sept. 1946	Min. 7.5	Apr. 1953
Yearly:	Max. 972	1946	Min. 176	1953

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	198	304	336	34.3	25.4	73.1	410	4,130	989			
2	198	291	296	35.0	28.6	92.5	45.2	3,150	985			
3	189	271	288	35.3	25.4	63.6	15.2	2,140				
4	198	275	293	33.2	32.1	42.0	15.2	1,560				
5	198	233	240	26.1	56.1	36.4	15.2	1,850				
6	202	205	214	27.5	62.2	40.6	13.1	2,170				
7	190	202	195	31.8	51.2	36.4	17.7	1,590				
8	228	205	182	32.8	40.6	31.8	17.7	1,670				
9	233	208	169	47.0	51.2	40.6	13.1	1,190				
10	225	208	168	56.5	51.2	39.2	13.1	1,100				
11	202	221	158	45.2	51.2	31.8	52.3	2,130				
12	210	208	145	36.4	40.6	24.7	193	876				
13	209	200	142	34.6	32.1	24.7	51.3	802				
14	222	190	130	36.0	36.4	21.9	45.2	1,110				
15	256	189	117	41.0	40.6	14.1	45.2	4,940				
16	277	197	112	39.6	51.2	12.0	27.2	3,200				
17	248	197	127	35.7	45.9	10.2	20.5	2,590				
18	217	188	109	34.6	40.6	8.8	428	2,060				
19	208	203	109	26.1	40.6	9.5	4,730	1,880				
20	205	192	104	21.5	40.6	14.5	7,060	1,780				
21	252	234	97.8	25.1	36.4	12.4	3,420	1,790				
22	216	252	97.8	35.3	36.4	8.1	3,130	3,020				
23	243	257	84.4	38.8	40.6	6.7	1,100	4,380				
24	333	222	77.0	27.5	40.6	6.0	816	4,940				
25	351	251	56.1	25.1	36.4	6.0	625	5,230				
26	296	341	58.3	23.7	28.6	6.0	629	5,230				
27	283	301	53.0	16.9	32.1	23.3	993	3,710				
28	283	338	47.7	14.5	40.6	12.2	3,920	3,710				
29	350		41.7	14.8	40.6	63.6	4,310	2,460				
30	466		42.4	18.4	36.4	179	4,060	1,870				
31	331		39.6		40.6		3,000	1,660				
Sum	6,583		950.3		1,101.5		79,918					
	7,717		4,329.8		1,253.1		39,231.2					

Current Year 1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Period 1945 - Aug. 1955			
	High		Low	Day	High			Average	Maximum	Minimum	
	High	Low	Day	Day	Low			Average	Maximum	Minimum	
Jan.	4.36	3.54	30	565	7	181	249	15,310	33,074	55,810	11,760
Feb.	4.07	3.51	28	406	19	177	235	13,060	34,693	62,420	11,210
Mar.	4.00	2.85	1	371	31	36.4	140	8,590	29,515	49,780	7,000
Apr.	3.08	2.56	9	75.6	29	12.7	31.7	1,880	11,620	29,110	448
May	3.15	2.66	5	96.4	3	22.6	40.4	2,490	13,218	36,080	1,310
June	4.69	2.36	30	883	†23	4.9	36.7	2,180	21,331	54,920	2,700
July	11.29	2.46	20	10,240	10	9.2	1,270	77,820	72,360	193,000	11,570
Aug.	10.79	3.94	15	9,570	20	441	2,580	158,520	66,819	158,520	10,550
Sept.											
Oct.											
Nov.											
Dec.											
Yearly											

† And other days

RIO CONCHOS NEAR OJINAGA, CHIHUAHUA

DESCRIPTION: Water-stage recorder and cable with stand-up cable car and winch, located 1.9 miles west of Ojinaga, Chihuahua, 3.7 miles west of Presidio, Texas, and 1.5 miles upstream from the confluence with the Rio Grande. The Rio Conchos enters the Rio Grande 2.0 miles above the Lower Presidio gaging station on the Rio Grande, 7.8 miles below the Upper Presidio gaging station on the Rio Grande, and 293.5 river miles below the American Dam at El Paso, Texas. The zero of the gage is 2,569.48 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 311 meter measurements during the year, 284 by the Mexican and 27 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting channel methods. Records available: May 1900 to March 1914 and August 1923 through December 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. La Colina Reservoir, with 19,500 acre-feet capacity and a maximum surface area of 1,160 acres, located about 7.5 miles downstream from La Boquilla Dam, and La Rosetilla Reservoir, located about 55.9 miles farther downstream, with a capacity of 15,400 acre-feet and a maximum surface area of 840 acres, are used for power development. Francisco I. Madero Reservoir, located on the Río San Pedro, a tributary to the Río Conchos, has a capacity of about 344,550 acre-feet. Power generation facilities: La Boquilla 14,647 kw., La Colina 3,620 kw., La Rosetilla 5,150 kw., and Francisco I. Madero none.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 162,000 second-feet on September 11, 1904. Min. no flow several days in May, June, and July 1953, and in July 1955.

Average Flow in Second-Feet

Daily: Max. 148,900 Sept. 11, 1904 Min. 0 Several days 1953 & 1955
 Monthly: Max. 24,540 Sept. 1904 Min. 4.7 Apr. 1955
 Yearly: Max. 3,720 1914 Min. 155 1953

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	177	317	312	10.2	2.8	4.9	1.1	3,370	1,550	1,850	583	519
2	185	272	309	8.1	5.7	50.1	125	* 2,700	1,040	1,700	494	498
3	185	271	250	8.8	3.9	181	12.0	* 2,150	1,100	2,040	583	438
4	182	273	231	7.4	2.8	58.6	3.9	* 1,490	1,130	10,030	629	350
5	171	251	216	5.6	2.8	41.7	2.1	2,190	1,150	3,270	561	329
6	176	229	184	4.6	2.8	37.4	2.5	* 1,380	1,110	1,590	533	300
7	183	213	155	4.9	4.2	37.4	2.1	2,010	996	3,710	629	279
8	185	199	147	4.9	4.2	35.0	1.8	* 1,320	981	4,520	671	251
9	256	192	136	3.9	4.2	11.3	1.1	* 1,250	794	3,740	544	242
10	259	194	117	4.2	3.2	8.5	0	* 922	565	3,420	604	263
11	227	196	125	4.2	3.5	5.7	0	1,810	512	2,850	696	284
12	188	198	110	3.9	4.2	5.3	0	* 1,290	522	2,910	544	272
13	186	204	104	6.0	4.2	4.6	1.4	* 915	381	2,680	487	276
14	203	177	97.5	5.7	4.6	4.6	2.5	851	335	2,200	470	277
15	219	184	89.0	4.6	3.9	3.5	1.8	* 4,770	303	1,960	470	272
16	236	162	92.2	4.6	3.9	3.9	1.8	* 1,810	342	1,570	420	258
17	259	150	72.4	4.9	3.2	2.8	1.8	* 1,690	618	1,390	374	319
18	225	153	67.8	5.7	3.2	2.8	158	* 2,320	466	1,270	351	328
19	212	159	61.4	3.9	3.9	2.1	* 1,230	* 1,580	466	1,180	360	339
20	206	173	44.1	3.2	3.5	2.5	* 8,120	* 2,910	1,140	1,020	357	367
21	193	170	44.1	3.9	3.5	2.1	* 4,270	* 2,460	992	1,080	344	294
22	206	198	41.0	3.9	3.9	2.1	* 2,870	* 1,790	1,280	886	351	265
23	189	215	37.4	3.2	3.9	2.1	* 1,350	* 3,470	882	777	413	268
24	206	213	28.3	3.1	3.9	2.1	929	* 3,780	4,200	996	351	243
25	291	185	24.7	4.2	3.5	2.1	590	* 4,170	1,920	844	314	242
26	297	212	21.5	3.5	2.5	2.1	710	* 4,480	1,100	692	320	227
27	254	301	21.5	2.8	3.9	2.1	777	* 4,240	1,700	667	337	333
28	255	269	18.7	2.4	4.2	78.0	* 3,100	* 3,340	2,010	657	357	287
29	252	16.2	2.8	4.6	4.6	4.6	* 3,300	* 2,540	3,340	636	406	262
30	343	14.1	2.8	24.0	1.8	* 4,350	* 2,540	2,570	844	523	246	242
31	371	11.3			28.3		* 2,630	* 2,720	657			
Sum		5,930	6,100	3	141.9	162.2	602.8	* 74,258	25,495	63,636	14,076	9,367

Current Year 1955							Period 1924-1955				
Month	Extreme Gage Feet		Extreme Second-Feet			Average Second-Feet	Total Acre-Feet	Acre-Feet			
			High	Low				Average	Maximum	Minimum	
	High	Low	Day		Day						
Jan.	4.72	3.67	9	466	4	164	225	13,840	52,626	147,000	11,500
Feb.	4.27	3.64	27	335	18	144	212	11,760	46,149	87,700	10,600
Mar.	4.23	2.82	1	335	31	11.3	103	6,350	41,016	80,800	5,410
Apr.	2.82	2.49	1	11.7	23	1.4	4.7	281	27,355	79,700	281
May	3.44	2.59	30	99.6	26	2.5	5.2	319	32,939	148,000	319
June	4.63	2.49	2	466	30	1.4	20.1	1,200	38,763	91,900	760
July	14.01	2.23	20	9,570	+10	0	* 1,110	* 68,520	87,573	502,000	8,890
Aug.	12.14	4.92	15	7,270	14	788	* 2,400	* 147,300	119,430	601,000	7,660
Sept.	14.04	4.17	24	11,510	16	272	1,180	70,400	228,812	1,173,000	6,770
Oct.	15.03	4.99	4	11,650	28	579	2,050	126,200	143,577	798,000	5,890
Nov.	5.35	4.43	10	819	+25	304	469	27,920	55,505	110,000	9,510
Dec.	5.02	4.20	1	590	26	207	302	18,580	47,948	97,700	9,940
Yearly	15.03	2.23		11,650		0	681	492,670	921,693	2,431,850	111,885

["] Estimated * Partly estimated † And other days

ALAMITO CREEK NEAR PRESIDIO, TEXAS

DESCRIPTION: Water-stage recorder, about 1,800 feet above the confluence with the Rio Grande. Measurements of high flows are made from the highway bridge, 200 feet downstream from the recorder. This creek enters the Rio Grande near the lower end of Presidio Valley, 9.7 river miles below the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua, and 306.9 river miles below the American Dam at El Paso, Texas. The zero of the gage is 2,541.61 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 62 meter measurements made during the year of low and medium flows, a high flow rating curve determined by slope-area calculations, and a continuous record of gage heights. Computations by shifting channel methods. Records available: January 1932 through December 1955.

REMARKS: A small irrigation reservoir (San Estaban), 10.5 miles south of Marfa, Texas, and irrigation diversions below the reservoir modify the flow of this spring-fed creek. On October 2, 1932, backwater from the Rio Grande reached a gage height of 8.33 feet at this station. This is the highest recorded gage height.

EXTREME FLOWS FROM RECORDS: Momentary: Max. * 16,400 second-feet on September 24, 1955, with a gage height of 7.33 feet. Min. Ø .1 second-foot on July 25, 1953.

Average Flow in Second-Feet

Daily:	Max. 3,290	Oct. 24, 1941	Min. .1	July 25, 1953
Monthly:	Max. 329	Sept. 1936	Min. .6	Oct., Nov., Dec. 1953
Yearly:	Max. 55.9	1941	Min. 4.3	1951

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.1	1.0	1.2	1.2	1.5	.4	.4	.9	1.0	1.7	1.8	1.6
2	1.2	1.0	1.2	1.2	1.1	15.2	.4	4.2	1.0	1.6	1.8	1.7
3	1.2	1.1	1.2	1.2	1.1	18.5	.4	2.0	.9	1.4	1.8	1.7
4	1.2	1.1	1.1	1.2	1.1	3.6	.4	4.5	.9 *1,260	1.8	1.7	
5	1.2	1.1	1.1	1.3	32.2	2.0	.4	25.0	.8	150	1.8	1.7
6	1.2	1.1	1.1	1.5	1.6	.3	.4	1.2	.8	16.2	1.8	1.7
7	1.2	1.2	1.1	1.6	.9	.3	.4	.8	.7	1.6	1.8	1.8
8	1.2	1.2	1.1	1.6	.7	.3	.4	.8	.7	1.6	1.8	1.8
9	1.2	1.2	1.0	1.5	.6	.3	.4	.8	.8	1.6	1.8	1.8
10	1.2	1.1	1.0	1.5	.6	.2	.4	.8	.8	1.6	1.8	1.9
11	1.2	1.0	1.0	1.5	.5	.2	.4	* 224	.8	1.5	1.8	2.0
12	1.2	1.0	1.1	1.5	.5	.2	.4	* 140	.9	1.3	1.9	2.0
13	1.2	.9	1.2	1.4	.5	.2	.4	* 10.0	.8	1.2	2.0	2.0
14	1.2	.9	1.3	1.4	.5	.2	.4	* 10.0	.7	1.0	2.0	1.9
15	1.2	.9	1.3	1.3	.4	.2	.4	* 77.3	.6	.9	1.8	1.9
16	1.2	1.0	1.3	1.2	.4	.2	.4	* 10.0	* 3.6	.7	1.7	1.8
17	1.2	1.0	1.3	1.0	.4	.2	.4	* 10.0	* 358	.6	1.5	1.8
18	1.2	1.0	1.3	.9	.5	.2	* 203	* 10.0	* 7.0	.7	1.5	1.8
19	1.2	1.0	1.3	.9	.5	.2	* 1,550	* 10.0	* 143	.9	1.5	1.7
20	1.1	1.1	1.3	.9	.5	* 770	* 533	* 259	* 1.3	1.0	1.5	1.7
21	1.1	1.1	1.3	.9	.5	* 1.2	15.2	* 141	* 1.3	1.1	1.5	1.7
22	1.1	1.1	1.3	.8	.5	* .9	.6	* 48.8	* 1.3	1.3	1.5	1.7
23	1.1	1.1	1.3	.8	.5	* .8	.6	* 52.6	* 30.1	1.4	1.5	1.7
24	1.0	1.1	1.3	.8	.5	.7	.6	* 1,440	1.5	1.5	1.7	
25	1.0	1.1	1.2	.8	.4	.6	.6	* 2.0	* 14.1	1.6	1.5	1.7
26	1.0	1.2	1.2	.8	.4	.5	.6	1.1	2.3	1.8	1.5	1.7
27	1.0	1.2	1.2	.8	.4	.4	* 62.8	1.4	* 2.0	1.9	1.4	1.7
28	1.0	1.2	1.2	.8	.4	.4	* 301	1.7	* 2.0	1.9	1.4	1.7
29	1.0	1.2	1.2	39.8	.4	.4	* 74.9	2.0	* 2.0	1.9	1.4	1.6
30	1.0	1.2	1.2	73.4	.4	.4	.4	1.2	1.7	1.8	1.5	1.6
31	1.0	1.2	1.2	.4	.4	.4	.9	1.3	1.8	1.8	1.6	
Sum	35.1	30.0	37.1	145.5		* 819.2	* 1,058.5	* 2,751.8	* 2,022.0	* 1,465.1	49.9	54.4

Current Year 1955

Month	Extreme Gage			Extreme Second-Feet		Average Second- Feet	Total Acre-Feet	Period 1932-1955				
	Extreme Gage		High	Extreme Second-Feet				Average	Maximum	Minimum		
Month	High	Low	Day	High	Low	Day	Acre-Feet	Average	Maximum	Minimum		
Jan.	4.57	4.50	2	1.2	1.2	24	1.0	1.1	69.6	176 *	273	
Feb.	4.54	4.50	3	1.2	1.2	6	.9	1.1	59.5	162	234	
Mar.	4.55	4.49	14	1.3	1.3	9	1.0	1.2	73.6	180	270	
Apr.	5.50	30	*	690	122	8	4.8	289	264 *	1,070	57.9	
May	5.11	5	145	115	.4	15	1.6	101	1,074	8,520	88.3	
June	6.40	20	*	7,250	110	.2	* 27.3	* 1,620	* 1,856 *	6,360	50.8	
July	6.26	19	*	6,400	1	.4	* 88.8	* 5,460	* 3,313 *	18,500	122	
Aug.	6.48	11	*	8,000	6	.8	* 34.1	* 2,100	* 3,050 *	16,330	73.0	
Sept.	7.33	24	*	16,400	115	.6	* 67.4	* 4,010	* 3,203	19,600	128	
Oct.	6.30	4	*	7,000	17	.6	* 47.3	* 2,910	* 2,046	19,200	36.9	
Nov.		13	Ø	2.0	127	Ø	1.4	99.0	207	807	35.7	
Dec.		11	Ø	2.0	1	Ø	1.6	108	190	408	39.3	
Yearly	7.33			* 16,400		.2	* 23.3	* 16,899.7	*	15,721	40,444 *	3,109.2

* Estimated * Partly estimated † And other days Ø Mean daily

RIO GRANDE AT LOWER PRESIDIO STATION

DESCRIPTION: Water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located about 10.1 river miles below the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua, .4 mile below the confluence of Alamito Creek with the Rio Grande, and 307.3 river miles below the American Dam at El Paso, Texas. The zero of the gage is 2,527.99 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 104 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: January through December 1955. Official operation of this new station began January 1, 1955. Records, published under this same station name, are also available from January 1896 through June 13, 1932 for a station located about 12.1 miles (erroneously reported in Water Bulletin Number 1 as 7.5 miles) below the confluence of the Rio Conchos and 1.3 miles above Alamito Creek; and from June 14, 1932 through December 31, 1954 for a station about 2.0 miles below the confluence of the Rio Conchos and 11.4 miles above the confluence of Alamito Creek.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1	197	320	314	5.9	8.6	.5	1.1	2,930	*	1,920	* 2,790	* 728	
2	195	309	319	4.3	3.2	11.4	39.5	3,260	1,150	* 2,440	609	566	
3	201	308	298	4.4	2.0	148	155	2,570	1,130	* 2,120	558	531	
4	195	295	249	3.9	1.8	58.4	15.4	1,680	1,120	* 7,240	678	439	
5	189	306	261	2.8	66.4	28.4	3.5	2,360	1,120	* 5,890	643	402	
6	195	270	237	2.3	9.9	19.3	1.5	1,580	1,200	* 3,070	555	390	
7	196	246	210	2.0	3.7	16.4	.8	2,330	1,020	* 4,500	617	343	
8	196	216	183	1.7	1.8	12.4	.2	1,450	955	* 5,200	729	312	
9	212	219	164	2.4	.9	5.2	.2	1,530	830	* 4,500	662	290	
10	308	221	140	4.9	.8	2.2	.3	1,010	642	* 3,700	601	296	
11	248	224	129	6.8	.7	1.2	.3	1,740	560	* 3,100	768	340	
12	223	222	139	1.9	.6	.7	.3	1,770	555	* 3,050	645	327	
13	216	240	146	1.6	.5	.5	.2	883	447	* 2,800	547	314	
14	224	227	146	2.6	.6	.5	.2	853	372	* 2,400	523	312	
15	231	215	120	2.3	.8	.5	.4	*	3,580	546	* 2,100	525	309
16	259	199	112	2.0	.9	.5	.2	2,570	394	* 1,800	476	289	
17	269	188	97.3	1.7	.8	.4	3.9	1,680	2,160	* 1,600	436	335	
18	267	184	69.0	1.4	.7	.5	.5	2,850	979	* 1,400	394	371	
19	240	181	70.7	1.4	.6	118	1,860	2,140	764	* 1,250	404	382	
20	218	187	70.5	1.3	.6	740	* 7,000	3,120	1,030	* 1,000	431	410	
21	203	194	68.3	1.3	.5	29.6	* 6,670	3,490	1,190	* 1,090	403	350	
22	239	205	58.1	1.2	.4	7.2	3,330	2,160	1,350	990	401	315	
23	232	244	47.3	1.1	.4	1.8	1,850	3,880	1,280	* 870	462	309	
24	219	243	38.0	1.0	.4	.5	860	* 4,040	7,700	* 1,080	443	305	
25	289	224	31.6	.9	.4	.3	541	* 4,820	3,640	* 940	384	290	
26	306	216	31.2	.9	.4	.3	620	* 4,730	1,890	* 800	354	274	
27	297	313	45.9	1.0	.4	.5	759	* 4,550	2,000	* 760	374	350	
28	259	310	39.1	1.0	.4	66.0	* 4,320	* 3,590	2,780	* 750	384	342	
29	279		24.6	37.6	.4	35.4	* 4,150	* 2,950	* 3,380	* 740	420	292	
30	292		16.6	52.1	.4	3.3	* 4,630	* 2,610	* 3,720	* 880	531	277	
31	431		10.7		.4		* 3,350	* 3,450	* 760			258	
Sum		6,726	155.7	1,309.9			* 82,156		* 71,610		10,874		
7,525		3,885.9	110.4	* 40,265.0			47,824		15,685				

Current Year 1955

Month	Extreme Gage			Extreme Second-Feet		Average Second- Feet	Total Acre-Feet	Period				
	Extreme Gage			Extreme Second-Feet				Acre-Feet				
	High	Low	Day	Day	High			Average	Maximum	Minimum		
Jan.	3.80	2.79	31	469	5	181	243	14,900				
Feb.	3.52	2.72	1	365	19	172	240	13,300				
Mar.	3.36	1.54	1	335	31	6.3	125	7,710				
Apr.	4.00	1.30	29	555	†25	.9	5.2	309				
May	2.87	1.23	5	193	†22	.4	3.6	219				
June	6.07	1.23	20	2,270	25	.3	43.7	2,600				
July	* 11.30	1.43	20	* 8,900	† 7	.2	* 1,300	* 79,900				
Aug.	* 9.82	4.27	15	* 6,620	13	757	* 2,650	* 163,000				
Sept.	13.75	3.59	24	12,800	15	337	1,590	94,900				
Oct.	11.74	* 4.32	4	9,390	30	* 700	* 2,310	* 142,000				
Nov.	4.56	3.60	10	807	26	347	523	31,100				
Dec.	4.27	3.31	2	618	†27	252	351	21,600				
Yearly	13.75	1.23		12,800		.2	* 789	* 571,538				

^a Estimated * Partly estimated † And other days

TERLINGUA CREEK NEAR TERLINGUA, TEXAS

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located 2.7 miles above the confluence with the Rio Grande. This creek enters the Rio Grande at the lower end of Santa Helena Canyon, 371.6 river miles below the American Dam at El Paso, Texas. The zero of the gage is 2,203.52 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 62 meter measurements of low flows during the year, observed high water marks of medium flows, a continuous record of gage heights at high flows, and a rating curve for medium and high flows, based on slope-area calculations. Computations by shifting channel methods. Records available: January 1932 through December 1955.

REMARKS: Irrigation diversions modify the flow of this spring-fed creek at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 34,900 second-feet on May 24, 1935, with a gage height of 17.59 feet on a gage .3 mile downstream. Min. no flow on September 29-30, 1937.

Average Flow in Second-Feet

Daily:	Max. 17,200	June 1, 1937	Min. " 0	Sept. 29-30, 1937
Monthly:	Max. 921	June 1937	Min. .83	Oct. 1934
Yearly:	Max. 146	1937	Min. 5.5	1943

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	* 1.8	* 1.9	* 1.9	2.0	* 4.7	3.0	* 10.0	1.6	* 143	* 9.4	2.4	* 2.1
2	* 1.8	* 1.9	* 1.9	2.0	* 2.8	3.0	* 558	1.8	2.7	* 7.0	* 2.4	* 2.0
3	1.7	* 1.9	* 1.9	1.9	* 2.8	142	* 522	1.9	* 2.5	* 4.7	* 2.4	* 2.0
4	* 1.8	1.9	1.9	1.9	* 1,320	2.5	* 13.2	2.1	* 2.4	* 175	* 2.4	* 2.0
5	* 1.8	* 1.9	* 1.9	1.9	* 1,500	2.5	11.5	2.2	* 2.2	* 16.3	2.5	2.0
6	* 1.9	* 1.9	2.0	* 1.9	* 62.2	2.5	* 10.3	2.4	* 2.1	* 2.6	* 2.5	* 2.1
7	2.0	* 1.9	2.0	* 1.9	* 38.9	2.5	* 9.0	2.6	1.9	* 2.6	* 2.5	* 2.3
8	* 2.0	* 2.0	* 2.0	1.9	* 38.9	2.5	* 7.8	2.7	* 2.0	* 2.6	* 2.5	* 2.4
9	1.9	* 2.0	* 2.0	* 1.9	* 38.1	2.3	* 6.6	2.9	* 2.1	* 2.6	* 2.5	* 2.5
10	* 1.9	* 2.0	* 1.9	1.8	* 38.1	2.0	* 5.4	2.9	* 2.1	* 2.6	* 2.5	* 2.6
11	* 1.9	2.0	1.9	1.8	* 33.3	1.8	* 4.1	* 2.9	* 2.2	* 2.6	* 2.5	* 2.8
12	* 1.9	* 2.0	* 1.9	* 1.8	* 28.5	1.6	* 2.9	* 2.9	* 2.3	* 2.6	* 2.5	* 2.9
13	* 1.9	* 2.0	* 1.9	* 1.8	* 23.7	1.3	* 2.9	* 2.9	* 2.4	* 2.6	* 2.5	* 2.8
14	1.9	* 2.0	1.9	1.7	* 19.0	1.1	* 2.9	* 2.9	* 2.4	* 2.6	* 2.5	* 2.6
15	* 1.9	* 1.9	* 1.9	* 1.7	* 14.2	1.1	* 2.9	* 44.7	* 2.4	* 2.6	* 2.5	* 2.5
16	* 1.9	* 1.9	* 1.9	1.6	* 9.4	1.1	* 2.9	5.5	* 2.4	* 2.6	* 2.4	* 2.4
17	* 1.8	* 1.9	* 1.9	1.6	* 4.6	1.1	* 2.9	5.5	* 90.0	* 2.7	* 2.4	* 2.3
18	* 1.8	1.9	1.9	1.5	* 4.2	41.9	* 2.9	5.5	* 203	* 2.7	* 2.4	* 2.1
19	* 1.8	* 1.9	* 1.9	1.5	* 3.9	586	* 2,140	5.5	* 4.7	* 2.7	* 2.4	* 2.0
20	1.8	* 1.9	* 1.9	1.6	* 3.5	717	* 1,160	144	* 4.7	* 2.7	* 2.3	* 2.0
21	* 1.8	1.9	* 1.9	1.6	* 3.2	116	* 11.6	7.0	* 4.7	* 2.7	* 2.3	* 2.0
22	* 1.8	* 1.9	* 2.0	1.7	* 2.8	34.2	* 5.0	151	* 236	* 2.6	* 2.3	* 2.0
23	1.8	* 1.9	* 2.0	1.7	* 2.5	31.7	* 4.8	124	* 18.8	* 2.6	* 2.2	* 2.1
24	1.8	* 2.0	* 2.0	1.8	* 2.1	31.7	* 4.4	2.4	* 4,150	* 2.5	* 2.2	* 2.1
25	* 1.8	2.0	* 2.0	1.8	* 2.1	31.7	* 3.8	2.4	* 717	* 2.4	* 2.2	* 2.1
26	* 1.9	* 2.0	* 2.0	1.9	* 2.1	31.7	* 89.9	2.4	* 18.8	* 2.4	* 2.2	* 2.1
27	* 2.0	* 1.9	* 1.9	1.9	* 2.1	67.4	* 496	2.4	* 18.8	* 2.4	* 2.1	* 2.1
28	2.0	1.9	1.9	1.9	* 2.1	45.4	* 114	2.4	* 16.4	* 2.4	* 2.1	* 2.1
29	* 2.0	* 1.9	* 1.9	99.5	* 2.1	15.0	* 3.8	2.4	* 14.1	* 2.4	* 2.1	* 2.2
30	* 2.0	* 2.0	* 2.0	130	* 95.1	12.0	* 2.9	2.4	* 11.7	* 2.4	* 2.1	* 2.2
31	* 2.0	* 2.0	* 2.0	242	* 2.1	2.1	* 2.4	2.4	* 2.4	* 2.4	* 2.3	
Sum	* 54.2	* 279.5	* 1,935.6	* 546.6	* 279.0	* 69.7						
	* 58.1	* 60.0	* 3,549.0	* 5,216.5	* 5,685.8	* 70.8						

Current Year 1955

Period 1932-1955

Month	Extreme Gage Feet		Extreme Second-Feet		Average Second-Feet	Total	Acre-Feet		
	High	Low	Day	Day			Average	Maximum	Minimum
Jan.			† 7	* 0	2.0	3	* 1.9	115	* 187
Feb.			† 8	* 0	2.0	† 1	* 1.9	108	* 137
Mar.			† 6	* 0	2.0	† 1	* 1.9	119	* 264
Apr.	3.77		29	* 1,330	†18	* 1.5	* 9.3	554	* 1,306
May	11.22		4	* 18,000	124	* 2.1	* 114	7,040	* 4,456
June	7.00		19	* 6,730	†14	* 1.1	* 64.5	3,840	* 6,692
July	9.00		19	* 11,200	31	* 2.1	* 168	10,300	* 7,782
Aug.	4.58		20	* 3,020	1	* 1.6	* 17.6	1,080	* 3,865
Sept.	9.01		24	* 11,300	7	* 1.9	* 190	11,300	* 6,345
Oct.	2.70		4	* 1,140	4	* 2.3	* 9.0	553	* 2,084
Nov.			† 5	* 0	2.5	†27	* 2.1	140	* 315
Dec.			12	* 0	2.9	† 2	* 2.2	138	* 351
Yearly	11.22			* 18,000		* 0	1.1	48.7	* 33,784
								35,287	105,807
									3,958.0

* Estimated * Partly estimated † And other days 0 Mean daily

RIO GRANDE AT JOHNSON RANCH, TEXAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located about 2 miles above Johnson Ranch, 14 miles below Castolon, Brewster County, Texas and Santa Elena Ranch, Chihuahua, and 392.9 river miles below the American Dam at El Paso, Texas. The zero of the gage is 2,045.30 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 81 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: April 1936 through December 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 58,800 second-feet on September 23, 1938, with a gage height of 19.75 feet. Min. 0 several days in 1953 and 1955.

Average Flow in Second-Feet

Daily:	Max.	56,900	Sept. 10, 1942	Min.	0	Several days 1953 & 1955
Monthly:	Max.	23,600	Sept. 1942	Min.	0	May 1953
Yearly:	Max.	4,780	1942	Min.	167	1953

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	189	360	274	26.4	910	95.2	294	2,860	3,320	3,230	871	488
2	191	404	279	25.6	225	48.6	85.6	3,260	1,980	2,270	694	564
3	212	349	279	25.0	185	882	959	2,800	1,260	2,070	623	568
4	227	328	273	23.8	503	315	337	2,430	1,150	2,930	576	549
5	218	307	242	21.4	8,800	85.3	33.9	1,710	1,080	9,470	656	506
6	191	304	192	20.5	* 670	67.9	29.2	2,190	1,090	6,310	645	449
7	181	301	210	18.4	* 73.2	57.5	24.5	1,500	1,180	3,200	583	422
8	184	290	212	17.8	* 50.6	34.6	19.8	2,010	1,020	4,720	606	384
9	192	270	199	17.2	* 45.1	21.7	15.0	1,450	978	5,220	685	354
10	201	254	178	16.4	* 39.9	16.2	10.3	1,560	907	4,580	676	337
11	249	236	160	15.6	46.5	18.0	5.6	* 1,210	726	3,490	561	327
12	318	235	143	16.0	38.7	* 13.2	.9	* 1,820	564	3,080	698	344
13	277	233	127	15.5	27.7	* 9.8	.8	* 1,580	524	2,980	662	370
14	253	228	126	14.9	21.4	* 6.9	.7	* 1,260	487	2,660	568	352
15	239	237	133	13.4	17.3	6.3	.6	* 1,710	408	2,310	546	339
16	237	224	121	12.9	15.4	5.1	" 98.7	4,660	413	2,090	531	331
17	250	211	108	11.4	11.1	3.7	" 701	2,360	861	1,700	510	323
18	276	197	93.1	10.9	7.8	3.0	" 1,820	* 1,870	2,160	1,610	479	310
19	286	188	83.3	9.4	5.3	943	" 3,570	2,240	1,210	1,460	438	360
20	279	186	72.1	8.8	4.3	1,160	4,960	2,860	891	" 1,290	425	387
21	263	180	57.5	7.8	3.7	836	6,480	4,390	838	* 1,190	445	398
22	234	188	47.8	7.2	2.6	250	4,270	2,970	2,160	1,120	444	410
23	210	198	45.0	6.0	1.7	108	2,440	3,380	1,680	992	410	349
24	245	* 197	46.0	5.4	1.6	55.3	1,150	4,160	6,740	897	415	326
25	251	* 202	46.4	4.4	1.0	48.2	717	4,230	15,800	992	456	313
26	238	* 206	42.2	3.4	.6	44.8	642	4,780	5,340	958	406	305
27	307	* 212	36.4	1.3	.5	75.1	1,330	4,750	1,780	848	379	301
28	313	198	35.0	.1	.4	73.7	1,640	4,540	1,800	684	378	287
29	296		33.7	.549	.3	114	4,380	* 3,430	2,180	673	388	362
30	273		31.0	1,880	21.4	80.3	4,050	* 3,180	3,870	706	419	333
31	293		29.9			829	4,720	3,930	755			309
Sum		6,923	2,805.9		5,478.4		87,080		76,485		11,757	
		7,573	3,955.4		12,560.1		44,785.6		64,397		16,173	

Current Year 1955

Period Apr. 1936-1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Acre-Feet			
	High	Low	Day	High	Low			Average	Maximum	Minimum	
Jan.	1.46	1.11	12	349	7	176	244	15,000	52,311	86,400	
Feb.	1.68	1.10	1	437	21	176	247	13,700	48,683	80,900	
Mar.	1.42	.45	1	296	31	26.2	128	7,850	40,688	85,300	
Apr.	5.75	.29	5	5,460	29	0	93.5	5,570	21,437	79,300	
May	11.85	.20	5	19,200	30	.2	405	24,900	46,496	240,000	
June	4.66	.25	19	3,750	19	2.5	183	10,900	60,419	251,000	
July	7.07	.33	19	7,540	15	" .5	1,440	88,800	134,314	620,000	
Aug.	6.38	" 2.23	20	6,830	12	" 1,020	2,810	173,000	132,895	485,000	
Sept.	12.45	1.52	25	21,000	15	382	2,150	128,000	279,807	1,404,000	
Oct.	8.64	1.97	5	10,300	29	637	2,470	152,000	165,842	929,000	
Nov.	2.41	1.50	1	999	27	369	539	32,100	61,284	164,000	
Dec.	1.87	1.31	3	599	28	283	379	23,300	52,135	110,000	
Yearly	12.45			21,000		0	933	675,120	1,096,311	3,461,400	120,747

^u Estimated * Partly estimated † And other days

RIO GRANDE AT AGUA VERDE STATION

DESCRIPTION: Water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located near Agua Verde Dam site 571.7 river miles below the American Dam at El Paso, Texas. The zero of the gage is 1,241.07 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 53 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: With some days missing, April to September and December 1947; January through June 1948; May 1949; January through May 1950; and continuous records from November 12, 1952 through December 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: † Momentary: Max. * 26,900 second-feet on September 25, 1955, at a gage height of 24.10 feet. Min. 132 second-feet on April 29, 1953, at a gage height of .42 foot.

Average Flow in Second-Feet

Daily:	Max.	" 15,000	Sept. 25, 1955	Min. 145	June 15, 16, & 17, 1953
Monthly:	Max.	3,460	Aug. 1954	Min. 182	May 1953
Yearly:	Max.	1,280	1955	Min. 341	1953

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	427	482	433	250	3,600	281	500	3,820	3,960	2,720	946	600
2	435	453	432	247	3,420	1,760	561	3,490	3,730	3,670	944	613
3	* 429	472	416	248	1,320	1,410	406	3,260	2,710	2,690	1,080	642
4	* 422	505	418	247	719	3,270	331	3,510	1,850	2,290	946	700
5	* 415	577	* 455	244	471	1,940	687	2,350	1,440	2,220	889	753
6	* 414	526	* 432	236	7,570	831	701	2,260	1,290	7,120	832	765
7	406	512	* 430	228	3,050	574	499	1,850	1,190	7,340	822	749
8	412	507	* 436	223	" 850	422	337	1,980	1,210	3,430	894	696
9	411	485	* 434	225	" 2,380	338	264	1,620	1,260	3,820	878	655
10	410	502	420	219	1,110	298	236	1,860	1,110	4,930	824	626
11	409	475	422	222	* 408	261	220	1,340	1,040	4,610	873	606
12	404	467	410	212	354	246	206	1,950	1,010	3,790	913	575
13	407	459	400	204	318	234	201	1,590	942	3,290	853	567
14	411	452	378	203	291	225	199	2,150	812	3,190	929	560
15	483	451	365	200	285	214	253	1,540	731	3,080	913	558
16	480	454	352	199	354	290	194	1,150	699	2,690	819	578
17	461	449	340	203	464	1,020	812	2,540	1,760	2,420	763	576
18	443	447	325	202	255	216	1,120	3,400	960	2,200	746	562
19	437	450	325	204	272	854	896	1,770	2,380	1,910	739	557
20	438	438	320	205	236	2,560	7,290	2,660	1,920	1,780	717	555
21	448	419	292	207	215	721	8,260	6,990	1,500	1,650	687	542
22	464	406	281	211	214	1,790	6,010	7,620	1,360	1,560	661	577
23	474	398	269	198	204	1,380	5,700	4,460	" 4,000	* 1,460	642	608
24	456	390	265	193	201	864	3,040	3,300	" 7,000	* 1,310	643	618
25	447	384	262	196	199	510	2,710	3,860	" 15,000	* 1,250	635	629
26	431	390	249	199	187	375	1,660	3,860	" 8,000	* 1,200	619	590
27	422	399	239	197	184	303	1,610	4,330	" 11,000	1,160	633	566
28	448	416	236	197	187	256	1,240	4,420	" 6,000	1,210	652	552
29	433		243	201	181	529	1,990	4,460	" 3,000	1,110	614	548
30	447		258	238	181	1,020	2,570	3,750	2,240	986	595	541
31	481		257		186	3,550	5,000		942		527	
Sum		12,765		6,458	29,866	24,992		98,140		83,028		18,791
	13,505		10,794		54,253			*	91,104		23,701	

Month	Extreme Gage			Extreme Second-Feet			Average Second- Feet	Total Acre-Feet	Period Dec. 1952-1955				
	Extreme Gage		Day	Extreme Second-Feet		Day			Acre-Feet		Average		
	Feet	High		High	Low				Maximum	Minimum			
Jan.	1.47	1.12	15	510	7	400	436	26,800	23,900	26,800	20,900		
Feb.	1.70	1.08	5	598	25	381	456	25,300	21,333	25,300	18,800		
Mar.	1.40	.62	5	485	28	230	348	21,400	19,900	22,900	15,400		
Apr.	.96	.43	29	335	23	186	215	12,800	22,567	43,000	11,900		
May	12.98	.38	6	13,700	26	177	963	59,200	39,033	59,200	11,200		
June	8.20	.41	19	5,600	1	183	833	49,600	47,633	81,900	11,400		
July	16.01	.43	21	17,500	16	185	1,750	108,000	59,333	108,000	34,000		
Aug.	15.50	2.71	21	14,000	16	1,010	3,170	195,000	144,233	213,000	24,700		
Sept.	# 24.10	2.00	25	* 26,900	16	694	* 3,040	* 181,000	* 99,933	* 181,000	32,400		
Oct.	11.13	2.47	7	9,350	31	932	2,680	165,000	77,833	165,000	17,600		
Nov.	2.81	1.69	3	1,120	30	590	790	47,000	30,600	47,000	17,500		
Dec.	2.07	1.46	6	769	31	523	606	37,300	25,750	37,300	19,100		
Yearly	# 24.10	.38		* 26,900		177	1,280	928,400	612,048	928,400	246,600		

["] Estimated * Partly estimated # Recorder flooded; high water mark ^{\$} Period November 12, 1952 through December 1955

RIO GRANDE AT LANGTRY, TEXAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located at Langtry, Texas, 24.1 river miles above the confluence of the Pecos River, and 614.1 river miles below the American Dam at El Paso, Texas. The zero of the gage is 1,091.69 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 95 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: May 1900 to October 1914; December 1919 through March 1920; January 1924 through December 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: The highest known gage height was 56.9 feet, which occurred about 3:00 P.M. on June 17, 1922. The discharge for this stage was 204,000 second-feet, which was estimated by extension of the rating curve. The lowest recorded flow was 208 second-feet, which occurred July 12, 1953.

Average Flow in Second-Feet ‡

Daily:	Max. 70,930	Oct. 5, 1932	Min. 216	June 17 and 18, 1953
Monthly:	Max. 23,700	Sept. 1942	Min. 263	May 1953
Yearly:	Max. 5,320	1942	Min. 450	1953

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	512	554	496	302	1,090	288	917	* 3,840	5,210	2,590	1,070	695
2	508	547	493	299	5,090	1,030	733	4,460	* 4,010	3,900	1,060	708
3	509	527	483	307	1,810	1,700	650	3,620	3,260	3,120	1,090	719
4	499	538	462	309	1,120	4,510	557	* 3,900	* 2,270	2,530	1,130	752
5	488	603	475	308	786	6,080	468	3,470	* 1,680	2,420	1,030	829
6	477	616	513	302	3,870	1,700	844	* 2,640	* 1,450	5,130	974	850
7	473	586	498	294	5,660	917	750	* 2,370	1,410	9,170	925	844
8	480	566	494	293	941	680	563	* 2,190	1,410	* 4,020	976	816
9	488	558	498	292	1,760	556	431	* 1,840	1,380	* 3,310	1,010	749
10	489	551	488	297	2,000	494	374	1,940	1,360	4,860	968	711
11	491	544	470	296	655	453	346	1,760	1,240	5,020	952	695
12	487	524	474	294	525	409	333	1,850	1,190	4,200	1,000	659
13	478	524	464	282	454	388	320	2,060	1,150	3,640	1,020	639
14	480	530	460	275	411	370	312	1,960	1,040	3,340	942	639
15	488	519	448	274	547	358	305	2,040	921	* 3,280	989	632
16	560	509	431	274	3,280	346	336	1,380	861	* 2,910	990	639
17	537	505	440	273	1,090	1,760	464	1,410	1,330	* 2,660	907	645
18	515	494	433	268	534	1,150	673	4,160	1,930	2,410	870	639
19	498	496	414	272	443	448	2,270	2,240	1,520	2,150	862	633
20	481	486	413	267	431	4,810	3,150	1,660	2,380	1,940	846	639
21	490	470	387	271	382	1,380	9,610	5,380	1,630	1,780	824	658
22	498	456	375	271	360	1,210	5,890	10,600	3,880	1,690	803	657
23	506	456	369	261	355	1,750	6,580	4,920	3,320	1,610	773	688
24	514	455	370	256	338	1,280	* 3,860	* 4,010	14,700	1,490	759	701
25	510	458	360	256	325	821	* 2,860	* 4,050	22,700	1,460	759	706
26	503	455	337	255	314	613	* 2,040	* 4,360	12,100	1,340	745	692
27	496	463	320	259	312	497	* 1,560	* 4,340	1,270	1,270	739	666
28	488	478	304	263	305	435	1,680	* 4,550	* 4,050	1,310	753	662
29	501		306	258	297	395	1,570	* 4,740	* 2,520	1,250	736	663
30	500		309	274	291	1,060	2,150	4,790	2,160	1,160	705	647
31	524		311		291		3,800	8,030		1,080		627
Sum	15,468	14,468	13,095	8,402	36,067	37,888	* 110,560	56,396	115,262	88,040	27,207	21,499

Month	Current Year 1955						Period 1924-1955				
	Extreme Gage Feet		Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Acre-Feet				
	High	Low	Day	High	Low		Average	Maximum	Minimum		
Jan.	.75	.58	16	566	7	473	499	30,700	84,396	* 245,000	27,300
Feb.	.86	.56	5	638	25	447	517	28,700	73,677	* 117,000	25,000
Mar.	.73	.36	6	520	29	300	422	26,000	70,538	118,000	23,300
Apr.	.41	.28	30	323	29	253	280	16,700	58,272	112,000	16,700
May	9.30	.27	6	14,000	30	286	1,160	71,500	90,171	271,000	16,200
June	9.33	.28	5	14,000	1	288	1,260	75,200	100,843	299,000	15,800
July	10.02	.29	21	13,900	17	284	1,820	112,000	151,004	719,000	31,700
Aug.	9.29	1.64	22	12,500	17	1,190	* 3,570	* 219,000	187,806	* 730,000	31,100
Sept.	18.68	1.21	25	39,100	17	838	3,840	229,000	321,127	1,410,000	19,600
Oct.	7.58	1.60	7	9,710	31	1,070	2,840	175,000	222,388	1,063,000	23,200
Nov.	1.73	1.06	3	1,190	30	692	907	54,000	91,471	* 211,000	22,600
Dec.	1.28	.93	6	858	†16	620	694	42,600	80,768	135,000	24,800
Yearly	18.68	.27		39,100		253	1,490	1,080,400	1,532,461	3,851,500	326,100

^a Estimated * Partly estimated † And other days ‡ Period 1931-1955

PECOS RIVER NEAR SHUMLA, TEXAS

DESCRIPTION: Bubbler-type water-stage recorder, operated with bottled nitrogen gas, on a rock ledge about 125 feet above the river bed, and light cable (winch operated, for carrying current meter and light weights only, installed May 5, 1955), located 13.0 river miles upstream from the Pecos High Bridge, and 18.5 river miles above the confluence with the Rio Grande. This confluence is 638.2 river miles below the American Dam at El Paso, Texas. The zero of the gage is 1,159.52 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 55 meter measurements made at low and medium stages during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: October 8, 1954 through December 1955 at this station. Records are also available for Pecos River near Comstock, 13.0 river miles downstream, from March 17 to December 3, 1898 and from May 1900 through October 7, 1954.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The flood of June 1954 reached a gage height of 121.7 feet at this station, or an elevation of approximately 1,281.2 feet above mean sea level.

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1 *	192	195	191	180	163	137	128	294	272	428	219	204
2 *	195	192	195	174	312	142	128	303	272	411	215	204
3 *	195	187	202	171	318	143	125	297	269	393	209	203
4 *	196	188	201	173	253	818	121	292	263	377	205	203
5 *	192	188	199	173	215	998	120	284	256	359	204	202
6 *	193	188	202	169	196	2,040	116	274	238	352	206	204
7 *	197	191	198	168	179	541	111	268	229	342	207	203
8	197	189	197	161	161	345	109	261	206	327	220	203
9	198	202	194	162	244	273	109	256	197	334	221	199
10	203	197	193	159	1,870	260	120	248	193	332	217	197
11	198	* 192	189	154	217	479	121	*	261	187	318	212
12	198	181	183	151	184	397	118	407	183	314	210	197
13	197	176	180	145	158	298	118	374	179	305	206	194
14	195	185	180	146	156	272	118	315	175	297	205	194
15	200	186	178	145	155	246	120	256	173	298	201	193
16	211	186	182	150	159	217	116	244	170	310	199	194
17	212	183	185	155	156	202	427	244	166	302	193	196
18	219	180	185	157	150	191	*	1,180	244	169	*	294
19	213	183	190	162	198	213	*	6,820	236	170	*	282
20	206	182	184	167	243	203	642	234	164	*	269	197
21	212	178	185	172	220	192	474	*	3,990	158	261	198
22	210	181	182	167	209	178	484	568	166	252	201	202
23	207	176	176	163	182	163	*	448	522	371	249	204
24	207	175	176	156	171	151	*	416	451	*	4,910	247
25	206	173	180	162	176	143	*	391	376	*	2,690	240
26	206	177	186	163	161	143	*	361	338	570	236	201
27	208	185	184	157	158	143	*	327	316	500	234	197
28	206	188	182	156	152	136	*	303	303	478	233	199
29	203	178	150	147	134	289	*	289	467	226	195	205
30	200	180	158	143	129	286	*	286	328	445	223	195
31	195	178		136		*	292	294		218		208
Sum	5,184	4,826	9,927	*	13,372	9,263	6,212					
	6,267	5,795	7,542	*	15,038	14,886	6,131					

Current Year 1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total	Period Nov. 1954-1955			
	High		Low	Day	Day			Average	Maximum	Minimum	
	High	Low	Day	Day	Day			Acre-Feet	Average	Maximum	
Jan.	1.74	1.58	18	224	† 1	θ*	192	202	12,400		
Feb.	1.73	1.58	9	207	25	168	185	10,300			
Mar.	1.67	1.47	21	204	23	169	187	11,500			
Apr.	1.53	1.33	1	187	13	137	161	9,570			
May	11.93	1.37	10	10,200	31	134	243	15,000			
June	7.77	1.37	4	8,820	30	127	331	19,700			
July	18.45	1.24	19	* 27,120	9	101	*	485	*	29,800	
Aug.	* 12.00	21	*	12,300			*	431	*	26,500	
Sept.	13.95	1.45	24	*	16,200	21	154	*	496	*	29,500
Oct.	2.49	1.67	1	434	31	215	299	18,400			
Nov.	1.71	1.56	9	223	18	187	204	12,200	*	12,200	
Dec.	1.68	1.57	30	215	14	188	200	12,300	*	12,250	
Yearly	18.45			* 27,120			*	286	*	207,170	

^v Estimated * Partly estimated † And other days θ Mean daily

GOODENOUGH SPRING NEAR COMSTOCK, TEXAS

DESCRIPTION: Water-stage recorder, located 4,000 feet above the confluence with the Rio Grande and 11.75 miles south-west of Comstock, Val Verde County, Texas. The stream from this spring enters the Rio Grande 664.9 river miles below the American Dam at El Paso, Texas. The zero of the gage is 967.42 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 24 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. From June 23, 1946, when recorder installation became inoperable, to October 12, 1954, discharges were estimated between measurements. Prior to June 23, 1946, records were based on continuous records of gage heights. Records available: February 23, 1929 through December 1955.

REMARKS: The flow of this spring is very uniform and not modified by diversions or storage. Backwater reaches the station when a discharge of approximately 35,000 second-feet occurs in the Rio Grande at the confluence. A maximum gage height of 43.35 feet was reached by backwater on June 28, 1954.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 846 second-feet on September 18, 1941, with a gage height of 4.57 feet. Min. 71.2 second-feet on July 22, 1953.

Average Flow in Second-Feet

Daily:	Max. 455	Oct. 1, 1932	Min. 71.2	July 22, 1953
Monthly:	Max. * 421	Oct. 1932	Min. * 73.1	July 1953
Yearly:	Max. 266	1933	Min. * 83.1	1952

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	103	88.8	89.7	90.0	111	97.8	100	97.5	157	127	105	98.7
2	102	87.5	89.7	91.2	109	96.8	100	97.5	150	126	104	99.3
3	102	88.2	89.8	91.8	107	96.5	99.2	97.5	141	124	103	99.2
4	102	88.9	89.9	90.9	106	98.3	99.3	96.8	136	124	103	98.5
5	99.2	89.7	90.0	90.8	105	117	99.4	95.4	132	124	105	98.4
6	99.1	90.4	90.0	89.2	104	113	99.5	95.4	129	123	104	99.0
7	99.0	91.1	90.1	89.1	103	110	99.6	95.4	126	121	104	99.6
8	99.9	91.8	90.2	88.9	101	110	98.9	96.1	123	121	104	98.2
9	98.8	92.6	90.3	89.5	103	110	98.4	95.4	123	122	108	99.5
10	96.6	93.3	90.3	89.3	100	109	98.4	94.7	122	122	109	100
11	96.9	94.0	90.4	90.6	99.3	109	97.8	96.1	122	121	108	100
12	97.1	93.6	90.5	89.7	98.8	110	97.2	104	121	121	106	101
13	96.4	93.2	90.6	88.9	99.0	110	97.3	108	119	119	107	101
14	98.8	92.8	90.6	89.2	98.9	110	97.4	108	119	119	107	101
15	99.1	92.4	90.7	89.5	105	109	97.5	125	117	118	107	100
16	99.3	92.0	90.8	89.8	102	109	97.6	129	115	118	106	102
17	99.6	91.6	91.0	90.7	120	98.4	122	115	118	105	102	102
18	97.8	91.2	91.2	90.3	102	119	98.5	118	114	118	105	99.9
19	97.0	90.8	91.3	90.6	102	116	98.5	117	113	118	103	98.2
20	98.3	90.4	91.5	90.2	102	115	97.8	116	113	117	103	98.4
21	98.6	90.0	91.7	89.8	102	113	97.9	116	113	115	103	98.3
22	97.8	89.6	91.9	90.8	102	112	97.9	115	120	115	103	98.3
23	97.0	89.2	92.0	91.0	102	111	97.9	115	135	115	101	98.0
24	97.3	89.3	92.2	89.8	102	110	97.9	115	134	114	101	96.9
25	96.6	89.4	92.4	90.2	103	108	97.9	114	141	113	99.7	95.2
26	95.8	89.4	92.2	94.4	101	107	98.0	112	146	113	99.4	94.8
27	95.1	89.5	92.0	101	101	105	97.4	111	138	112	99.1	95.1
28	93.7	89.6	91.8	109	99.9	104	97.4	110	133	109	98.3	94.8
29	92.2		91.7	106	98.4	103	97.4	110	130	109	98.0	93.7
30	90.8		91.5	109	98.3	102	97.5	109	128	107	98.3	92.6
31	90.4		91.3		98.0		98.7	137		107		92.9
Sum	2,540.3		2,771.2	3,166.6	3,260.4		3,368.8	3,825	3,650	3,044.9		
	3,027.2		2,819.3								3,106.8	

Current Year 1955

Period Mar. 1929-1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Low			Average *	Maximum	Minimum
Jan.	.93	.81	1	103	31	89.4	97.7	6,000	7,890	19,620
Feb.	.83	.74	11	94.0	2	87.5	90.7	5,040	7,020	17,030
Mar.	.76	.65	25	92.4	1	89.7	90.9	5,590	7,669	17,770
Apr.	1.77	.64	26	175	20	88.8	92.4	5,500	7,432	16,580
May	3.64	.86	15	385	31	97.4	102	6,280	8,036	16,840
June	1.17	.84	17	122	2	96.1	109	6,470	8,078	16,040
July	1.42	.81	31	137	14	96.8	98.3	6,040	8,575	16,460
Aug.	2.72	.78	15	267	110	94.7	109	6,680	8,278	15,840
Sept.	3.48	1.10	24	352	121	112	128	7,590	8,847	25,000
Oct.	1.38	1.07	1	128	31	106	118	6,160	8,365	21,850
Nov.	1.08	.89	10	110	30	97.0	104	6,040	8,205	20,470
Dec.	.94	.78	16	103	30	91.2	98.2	74,630	97,518	192,840
Yearly	3.64	.64		385	0	87.5	103			* 60,320

^a Estimated * Partly estimated † And other days 0 Mean daily

UPPER DEVILS RIVER STATION

DESCRIPTION: Bubbler-type water-stage recorder, operated with bottled nitrogen gas, on a rock ledge about 50 feet above the river bed, located 26.4 river miles upstream from U.S. 90 Highway bridge and 30.9 river miles above the confluence with the Rio Grande. This confluence is 680.1 river miles below the American Dam at El Paso, Texas. The sea level elevation of the zero of the gage is undetermined.

RECORDS: Based on 18 meter measurements made during the year by wading, a continuous record of gage heights, and a stable rating curve for low flows; discharges above 1,000 second-feet were obtained by extension of the rating curve. Records available: August 7, 1954 through December 1955. For additional records, see "Devils River near Del Rio, Texas" and "Devils River near Mouth", pages 25 and 26 in this bulletin.

REMARKS: This station is located above slack water from the proposed Diablo Reservoir on the Rio Grande. The June 1954 flood reached a gage height of 35.9 feet at this station.

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	* April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	171	157	136	115	99.2	88.1	77.3	150	201	305	178	148
2	171	154	134	115	97.3	89.9	75.7	148	183	290	176	148
3	169	152	132	115	97.3	91.7	75.7	148	176	280	173	148
4	166	152	132	115	97.3	91.7	75.7	141	171	271	173	145
5	166	152	132	113	97.3	93.5	74.0	132	164	268	176	145
6	169	152	132	113	97.3	91.7	74.0	130	161	265	171	145
7	166	152	132	111	97.3	91.7	74.0	128	159	257	171	143
8	166	152	130	111	93.5	86.3	72.4	128	157	245	181	143
9	169	152	130	109	" 100	80.9	72.4	128	152	240	178	143
10	173	150	130	109	" 100	99.2	72.4	" 128	152	234	173	143
11	173	148	130	107	" 100	97.3	72.4	" 178	152	229	173	141
12	171	145	130	107	" 100	91.7	74.0	" 368	150	226	171	143
13	169	148	128	107	" 100	84.5	74.0	" 198	148	220	169	143
14	166	148	123	105	" 475	80.9	74.0	" 180	143	220	169	143
15	166	145	121	105	" 285	82.7	74.0	" 180	141	217	166	143
16	169	145	121	103	" 122	80.9	74.0	" 180	138	215	166	143
17	169	145	123	103	" 120	84.5	77.3	" 180	134	215	164	143
18	166	143	123	101	" 400	82.7	266	" 180	134	212	161	141
19	164	143	121	101	" 150	82.7	* 3,840	" 190	136	206	164	141
20	164	143	121	101	" 120	80.9	* 1,060	" 180	134	201	161	138
21	164	143	119	101	" 100	80.9	404	" 180	132	196	161	138
22	164	143	117	101	" 100	80.9	274	" 180	132	193	157	138
23	164	143	117	101	" 125	79.1	234	" 180	148	191	154	136
24	164	143	117	101	" 115	77.3	209	" 180	" 39,000	191	152	134
25	161	141	117	101	" 100	77.3	196	" 181	" 8,200	188	152	132
26	159	134	* 115	99.2	99.2	75.7	181	* 183	734	186	152	132
27	159	136	* 113	99.2	97.3	74.0	171	183	431	" 183	148	132
28	161	136	* 111	99.2	95.3	77.3	164	181	374	" 181	148	130
29	161	136	* 113	99.2	91.7	79.1	159	173	344	" 181	* 150	130
30	159	133	* 113	99.2	89.9	79.1	154	176	315	" 178	* 150	130
31	159	136	* 115	88.1			152	229		178		136
Sum			4,097	* 3,167.0	2,534.2	*	5,401		6,862	4,340		
			5,138	3,828	* 4,050.0	*	8,727.3	" 52,896	4,938			

Current Year 1955

Period Sept. 1954-1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total	Acre-Feet		
	High	Low	Day	High	Low			Average	Maximum	Minimum
Jan.	2.26	2.19	†10	173	31	157	166	10,200		
Feb.	2.19	2.09	† 1	157	26	134	146	8,130		
Mar.	2.11	1.98	1	138	†25	111	123	7,590		
Apr.	2.00	1.92	† 1	115	126	99.2	* 106	* 6,280		
May		14	Øu	475	31	Ø 88.1	* 131	* 8,030		
June	1.97	1.78	10	109	† 8	74.0	84.5	5,030		
July	9.52	1.77	19	* 5,210	† 5	72.4	* 282	* 17,300		
Aug.		12	Øu	368	† 7	Ø 128	* 174	* 10,700		
Sept.	**	2.08	24	Øu	39,000	†17	132	†1,760	" 105,000	" 14,400
Oct.	2.75	2.27	1	312	†30	176	221	13,600	14,200	13,600
Nov.	2.29	2.12	† 8	181	27	141	165	9,790	11,995	12,200
Dec.		2.06	† 1	Ø*	148	25	128	140	8,610	9,905
Yearly	**			Øu	39,000		* 290	* 210,260		

^u Estimated * Partly estimated † And other days Ø Mean daily ** High water mark 20.5 to 21.0 feet

DEVILS RIVER NEAR DEL RIO, TEXAS

DESCRIPTION: Water-stage recorder on the main highway bridge, 12 miles northwest of Del Rio, Texas and 4.5 miles above the confluence with the Rio Grande. Devils River enters the Rio Grande 680.1 river miles below the American Dam at El Paso, Texas. The zero of the gage is 951.80 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 17 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: September 2, 1932 through December 1955 at this station; May 1900 to March 1914 for a point 2.8 miles below the highway bridge; December 1923 to September 1, 1932 for a point 1.8 miles below the highway bridge; August 1954 through December 1955 at the Upper Devils River station, 26.4 miles upstream; and August 7, 1954 through December 1955 at Devils River near Mouth, 3.7 miles downstream. Also available in Water Bulletin No. 9 is a graph of river flow from 1871 through 1939.

REMARKS: The monthly flow of this spring-fed river is not modified, but the daily flow is modified by two power dams with a combined hydroelectric generating capacity of 3,100 kva, the operation of which began in 1929.

EXTREME FLOWS FROM RECORDS: The greatest recorded flow was 597,000 second-feet, which occurred September 1, 1932, at a corrected gage height of 36.60 feet at the present station. Zero flow sometimes occurs for a few hours at this station.

Average Flow in Second-Feet ‡

Daily:	Max. * 227,000	June 28, 1954	Min. 80.6	Apr. 21, 1953
Monthly:	Max. 15,100	Sept. 1932	Min. 131	Aug. 1952
Yearly:	Max. 1,770	1932	Min. 182	1952

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	301	261	263	206	196	191	166	251	292	478	322	297
2	309	141	265	152	150	169	179	258	267	457	346	292
3	343	328	224	206	173	170	159	226	258	452	320	306
4	331	311	260	205	185	181	162	231	256	455	301	291
5	321	261	242	188	175	206	160	232	253	466	319	294
6	304	238	235	219	196	191	160	231	219	372	318	276
7	283	243	222	187	178	121	162	242	235	472	290	281
8	314	289	227	182	185	244	155	238	253	393	353	286
9	313	266	212	184	162	179	160	233	252	399	325	264
10	288	285	230	203	112	184	166	219	196	399	328	248
11	319	228	230	185	306	203	159	242	237	406	323	275
12	314	266	224	182	320	167	157	559	226	408	323	264
13	313	267	229	209	204	157	160	302	247	365	326	264
14	277	288	225	186	172	167	155	299	236	399	328	264
15	337	283	206	192	* 904	177	156	261	249	384	331	256
16	309	281	231	185	475	143	156	232	215	384	323	267
17	315	292	201	189	190	126	207	216	200	381	306	275
18	311	255	214	192	227	241	211	215	241	350	299	279
19	284	281	220	195	463	145	1,920	211	215	368	277	274
20	281	244	224	198	198	166	2,410	234	219	355	314	274
21	246	247	169	200	151	176	686	233	235	339	300	291
22	288	270	219	196	212	173	461	902	210	339	315	281
23	297	238	183	202	185	157	367	710	237	344	319	280
24	282	266	205	195	171	172	232	496	41,000	343	303	287
25	280	233	221	191	242	158	256	299	8,480	327	304	289
26	269	264	195	195	184	163	*	276	291	984	329	286
27	299	248	147	221	147	159	228	289	617	353	295	276
28	243	261	227	193	178	157	251	267	531	372	274	271
29	257		208	169	168	160	253	253	479	351	269	288
30	265		173	209	170	160	260	255	479	342	294	299
31	266		213		150		244	320		331		276
Sum			7,335	6,744	5,816	5,163	9,447	10,834	58,018	11,913	9,340	8,651
9,159					7,129							

Current Year 1955 Period 1924-1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet Day	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Low			Average	Maximum	Minimum
Jan.	1.42	.48	21	611	14	44.8	295	18,200	21,262	42,250
Feb.	1.48	.50	3	786	2	35.0	262	14,500	20,013	54,500
Mar.	1.30	.70	25	491	17	89.7	218	13,400	20,426	43,300
Apr.	1.28	.70	6	474	5	102	194	11,500	23,488	67,800
May	2.06	.50	15	1,600	10	51.7	230	14,100	38,136	356,900
June	1.28	.50	8	445	17	32.4	172	10,200	*	678,000
July	3.90	.47	19	6,160	14	27.4	349	21,500	46,115	377,000
Aug.	2.89	.67	12	3,040	† 1	84.1	305	18,700	24,997	107,000
Sept.	13.00	.59	24	86,700	13	55.5	1,930	115,000	71,006	895,990
Oct.	1.88	.68	6	1,130	31	108	384	23,600	42,667	349,000
Nov.	1.41	.68	27	553	18	94.2	311	18,500	23,490	60,300
Dec.	1.33	.72	24	474	16	90.0	279	17,200	21,934	49,520
Yearly	13.00	.47		86,700		27.4	409	296,400	418,302	1,284,080
										131,830

* Partly estimated † And other days ‡ Period 1932-1955

DEVILS RIVER NEAR MOUTH

DESCRIPTION: Water-stage recorder and rock and concrete low flow station control, located 3.7 river miles downstream from U.S. 90 Highway bridge and .8 mile above the confluence with the Rio Grande. This confluence is 680.1 river miles below the American Dam at El Paso, Texas. The zero of the gage is 911.00 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 16 meter measurements during the year by wading, a continuous record of gage heights, and a stable rating curve. Records available: August 1954 through December 1955. For additional records, see "Upper Devils River Station" and "Devils River near Del Rio, Texas", pages 24 and 25 in this bulletin.

REMARKS: The monthly flow of this spring-fed stream is not modified, but the daily flow is modified by two power dams of June 1954, the backwater surface reached an elevation of 969.00 feet at the steam electric plant, located approximately 2,000 feet upstream from this station.

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	334	345	333	263	262	249	202	287	348	* 532	* 384	365
2	383	225	335	190	194	217	207	292	318	* 511	* 384	350
3	403	386	294	265	225	225	193	253	305	* 506	* 384	361
4	390	411	330	266	246	236	193	254	301	* 530	* 384	346
5	386	348	312	257	232	260	188	251	298	* 534	* 380	361
6	367	319	* 293	276	253	243	190	256	263	* 431	* 380	324
7	334	308	282	249	244	183	191	259	276	* 546	* 349	333
8	396	378	294	249	245	286	188	258	294	* 448	* 423	350
9	380	329	278	251	220	240	190	257	297	* 455	* 383	335
10	346	349	300	269	280	240	204	245	234	* 453	* 379	306
11	393	290	299	251	325	259	193	269	278	* 458	* 375	349
12	367	320	295	264	390	215	190	* 584	274	* 458	* 372	328
13	379	305	296	252	301	202	193	* 327	272	* 413	* 372	334
14	315	334	298	245	245	212	184	* 324	275	* 442	* 372	329
15	421	324	263	248	795	219	189	* 286	288	* 425	* 366	331
16	347	326	311	245	580	205	189	* 257	251	* 422	* 368	329
17	" 375	336	280	248	278	152	248	* 241	240	* 428	* 346	334
18	" 374	298	290	243	267	270	353	* 249	282	* 403	* 344	324
19	" 350	326	294	252	597	195	1,950	* 249	257	* 422	* 320	* 336
20	" 349	296	298	252	298	192	" 2,430	271	259	* 409	* 357	* 336
21	" 317	300	257	255	215	213	852	274	277	* 393	* 340	* 353
22	" 362	320	285	248	292	210	569	* 790	258	* 393	* 357	* 343
23	" 374	297	253	254	247	198	469	* 821	278	* 398	* 354	* 342
24	" 361	322	276	251	240	204	294	* 565	* 41,000	* 397	* 339	* 349
25	" 362	266	293	251	295	197	319	* 348	* 8,520	* 381	* 340	* 351
26	" 354	324	270	252	284	196	304	* 331	* 1,030	* 383	* 341	* 348
27	" 400	308	215	302	208	195	264	* 338	* 660	* 405	* 355	* 338
28	322	" 321	284	249	258	190	289	* 306	* 574	* 422	* 323	* 333
29	338		267	225	241	192	285	* 294	* 522	* 399	* 324	* 350
30	343		244	277	243	190	285	* 300	* 522	* 389	* 352	* 361
31	347		276	210	274	274	365	* 376				* 338
Sum		9,011	7,599	6,485	* 12,269		* 10,401		* 13,562		* 10,567	
*11,269		8,895	9,210					* 59,251		10,847		

Current Year 1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Period Aug. 1954-1955		
	High		Low	Day	High			Average	Maximum	Minimum
	High	Low	Day	Day	High			Average	Maximum	Minimum
Jan.	2.66	1.00	21	650	14	81.1	* 364	* 22,400		
Feb.	2.82	1.05	3	717	2	93.0	* 322	* 17,900		
Mar.	2.45	1.26	25	560	†21	147	* 287	* 17,600		
Apr.	2.35	1.24	10	520	29	142	* 253	* 15,100		
May	4.09	1.02	15	1,330	11	85.8	* 297	* 18,300		
June	2.50	.88	8	581	18	55.1	* 216	* 12,900		
July	.92	20	20	* 2,430	14	63.5	* 396	* 24,300		
Aug.		23	9*	821	17	* 241	* 336	* 20,600	* 25,900	* 31,200
Sept.	21.02	1.15	24	* 86,500	10	118	* 1,980	* 118,000	* 72,600	* 118,000
Oct.	2.67	7		698	31	* 376	* 437	* 26,900	* 28,500	* 30,100
Nov.	2.39	1.11	27	574	19	142	* 362	* 21,500	* 23,500	* 25,500
Dec.		1.17	1	365	14	165	* 341	* 21,000	* 22,650	* 24,300
Yearly	21.02			* 86,500			* 465	* 336,500		

* Estimated * Partly estimated f And other days # Mean daily

RIO GRANDE BELOW DIABLO DAM SITE

DESCRIPTION: Bubbler-type water-stage recorder, operated with bottled nitrogen gas, and stand-up cable car equipped for winch and heavy weights, located 10.6 river miles above the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, 2.9 river miles below the confluence of the Devils River, and 683.0 river miles below the American Dam at El Paso, Texas. The zero of the gage is 893.79 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 45 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: September 1, 1954 through December 31, 1955. Records are also available from May 1900 to April 1915 for a station 1.9 miles upstream; from December 1919 to March 1920 for a station 1.6 miles downstream near McKee's Switch; from December 1923 to July 2, 1941 for a station approximately 10.4 miles downstream; and from July 2, 1941 through August 1954 for the station at the international highway bridge 10.6 miles downstream.

REMARKS: Reservoirs, diversions, and drainage and power plant returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: The flood of June 1954 reached a peak gage height of 55.72 feet and a maximum discharge of 1,158,000 second-feet, determined by slope-area computation. This is the greatest rate of discharge recorded at any point on the Rio Grande.

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,360	1,310	1,230	982	1,050	854	1,450	4,550	7,030	3,710	1,980	1,480
2	1,400	1,230	1,230	914	2,300	837	1,500	4,920	5,160	4,080	2,000	1,440
3	1,370	1,360	1,220	948	* 4,900	1,400	1,280	4,520	4,800	5,060	1,950	1,420
4	1,370	1,390	1,230	948	* 2,610	2,310	1,260	4,190	3,790	4,270	1,960	1,430
5	1,370	1,330	1,230	948	1,880	8,650	1,150	4,400	3,120	3,850	2,010	1,460
6	1,350	1,360	1,230	982	* 1,660	4,820	1,080	3,390	2,500	3,590	1,910	1,520
7	1,290	1,390	1,240	959	* 6,650	3,330	1,420	3,140	2,430	8,190	1,800	1,550
8	1,320	1,400	1,220	959	* 4,470	2,120	1,400	2,630	2,230	7,820	1,930	1,590
9	1,310	1,350	1,230	959	* 2,560	1,630	1,190	2,820	2,220	4,800	1,880	1,570
10	1,280	1,360	1,230	959	* 9,490	1,430	1,090	2,470	2,110	4,850	1,890	1,500
11	1,320	* 1,290	1,220	914	3,750	1,330	1,010	2,730	2,110	5,950	1,860	1,500
12	1,280	* 1,320	1,180	925	* 2,170	1,380	988	3,390	1,990	5,710	1,840	1,490
13	1,310	* 1,290	1,180	891	* 1,650	1,330	993	2,890	1,960	4,930	1,900	1,440
14	1,230	* 1,310	1,160	868	* 1,440	1,210	939	3,080	1,900	4,480	1,920	1,410
15	1,320	1,250	1,130	868	* 3,300	1,180	910	3,060	1,810	4,310	1,830	1,380
16	1,280	1,250	1,160	857	* 3,520	1,170	903	2,670	1,620	4,270	1,870	1,380
17	1,370	1,250	1,110	857	* 4,160	1,380	991	2,410	1,540	3,990	1,860	1,370
18	1,370	1,200	1,110	847	* 2,140	2,470	1,450	2,950	2,520	3,630	1,750	1,370
19	1,320	1,230	* 1,100	857	* 2,230	2,070	9,700	4,640	1,980	3,440	1,690	1,400
20	1,290	1,200	* 1,090	868	1,560	2,370	8,390	3,160	2,400	3,130	1,720	1,390
21	1,230	* 1,220	* 1,050	868	* 1,460	4,440	8,220	6,700	2,820	2,930	1,690	1,370
22	1,320	1,240	* 1,050	857	* 1,350	2,260	8,460	11,600	2,300	2,760	1,650	1,340
23	1,320	1,220	1,010	868	* 1,300	2,180	7,190	9,510	5,500	2,610	1,620	1,310
24	1,330	1,240	994	847	* 1,170	2,500	6,580	6,150	* 49,400	2,480	1,550	1,310
25	1,320	1,190	* 1,040	836	1,220	2,030	4,490	4,810	* 37,600	2,340	1,520	1,330
26	1,290	1,220	* 1,030	929	* 1,260	1,600	4,000	5,080	* 14,100	2,340	1,510	1,340
27	1,330	1,200	* 982	1,490	* 1,090	1,340	3,120	5,020	14,000	2,230	1,480	1,340
28	1,280	1,220	* 1,020	925	* 903	1,190	2,540	5,360	8,110	2,180	1,460	1,310
29	1,280	1,200	* 994	914	* 874	1,090	2,480	5,330	5,200	2,210	1,460	1,320
30	1,310	1,200	971	1,070	* 947	1,020	2,610	5,310	3,920	2,120	1,500	1,370
31	1,310		971		* 882		3,350	7,890		2,040		1,320
Sum	35,820	*34,842	27,914	*75,946	62,921	92,134	140,770	*198,170	120,300	52,990	43,750	
40,830												

Current Year 1955

Month	Extreme Gage			Extreme Second-Feet			Average Second- Feet	Total	Acre-Feet		
	High	Low	Day	High	Low	Day			Average	Maximum	Minimum
Jan.	2.10	1.62	† 1	1,650	14	1,010	1,320	81,000			
Feb.	2.12	1.65	3	1,680	†25	1,040	1,280	71,000			
Mar.	2.00	1.43	† 7	1,500	†25	794	* 1,120	* 69,100			
Apr.	3.00	1.35	27	3,240	†24	712	930	55,400			
May	7.47	10	* 18,100	29	0*	874	* 2,450	* 151,000			
June	6.20	1.38	5	12,800	1	765	2,100	125,000			
July	7.80	1.33	19	19,500	16	760	2,970	183,000			
Aug.	6.64	2.37	22	14,400	18	2,100	4,540	279,000			
Sept.	* 18.70	1.86	24	* 96,800	17	1,380	* 6,610	* 393,000	* 280,500	* 393,000	168,000
Oct.	5.37	2.26	† 7	9,610	31	1,800	3,880	239,000	187,000	239,000	135,000
Nov.	2.52	1.90	5	2,230	†27	1,280	1,770	105,000	95,450	105,000	85,900
Dec.	2.26	1.78	8	1,780	23	1,110	1,410	86,800	84,550	86,800	82,300
Yearly	* 18.70			* 96,800			* 2,539	* 1,838,300			

* Partly estimated † And other days Ø Mean daily

ARROYO LAS VACAS NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Water-stage recorder and cable with sit-down cable car, and control wall with notch opening capacity of 77.7 second-feet, located 1.5 miles upstream from Cd. Acuña, Coahuila and 1.8 miles upstream from the confluence of Arroyo las Vacas with the Rio Grande at a point just above the Del Rio-Cd. Acuña International Bridge. This confluence is 693.5 river miles below the American Dam at El Paso, Texas. The zero of the gage is 885.82 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 143 meter measurements during the year, a stable rating curve up to 77.7 second-feet, and a continuous record of gage heights. Computations by shifting channel methods for flows above notch capacity. Records available: Occasional estimates from June 1935 to March 19, 1938 and continuous records from March 20, 1938 through December 1955.

REMARKS: The low flow of this stream is from springs and is modified by irrigation diversions upstream. The reinforced concrete control wall, 52 feet downstream from the recorder, was built in January 1955 and the zero of the gage was changed to coincide with the notch elevation. On June 28, 1954, backwater from the Rio Grande reached an elevation of 902.49 feet at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 25,780 second-feet on September 30, 1954, with a gage height of 16.14 feet. Min. .3 second-foot on various days in 1952, 1953, and 1954.

Average Flow in Second-Feet

Daily:	Max. 3,530	Oct. 3, 1944	Min. .3	Several days 1952, 1953 & 1954
Monthly:	Max. 207	June 1954	Min. .4	Several months 1952, 1953 & 1954
Yearly:	Max. 44.1	1954	Min. 2.8	1952

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.7	3.9	3.9	3.9	3.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9
2	6.7	3.9	3.9	6.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
3	6.7	6.7	3.9	6.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
4	6.7	3.9	3.9	3.9	3.9	177	3.9	3.9	3.9	3.9	3.9	3.9
5	6.7	3.9	3.9	6.7	3.9	29.6	3.9	3.9	3.8	3.9	3.9	3.9
6	6.7	6.7	3.9	6.7	3.9	6.7	3.9	3.9	3.8	3.9	3.9	3.8
7	6.7	6.7	3.9	6.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9	1.4
8	6.7	6.7	3.9	6.7	3.9	3.8	3.9	3.9	3.9	3.9	3.9	3.8
9	6.7	6.7	6.7	6.7	3.9	3.9	3.9	3.9	3.9	3.9	1.4	
10	3.5	6.7	6.7	6.7	3.8	3.8	3.9	6.6	3.9	3.9	3.9	3.9
11	3.5	6.7	6.7	6.7	95.3	3.9	3.9	6.6	8.8	3.9	3.9	3.9
12	3.5	6.7	3.9	3.9	29.7	3.8	3.9	6.7	3.9	3.9	3.9	3.9
13	3.5	6.7	3.9	6.7	6.7	3.9	3.9	10.6	3.9	3.8	3.9	3.9
14	6.7	10.6	6.7	6.7	3.8	3.8	3.9	6.6	3.9	3.8	3.9	3.9
15	6.7	6.7	6.7	6.7	3.9	3.9	3.9	8.1	3.9	1.4	3.9	3.9
16	6.7	6.7	6.7	6.7	3.9	4.5	3.9	6.7	3.8	3.9	3.9	3.9
17	6.7	6.7	6.7	6.7	3.9	10.5	3.9	3.9	3.9	3.8	3.9	3.9
18	3.5	6.7	6.7	6.7	3.8	3.9	177	3.9	3.9	3.8	3.9	3.9
19	3.5	6.7	6.7	6.7	6.7	3.9	10.6	3.9	3.9	3.9	3.9	3.9
20	3.5	6.7	6.7	6.7	3.8	3.9	6.7	3.9	3.8	3.9	3.9	3.9
21	3.6	6.7	3.9	6.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
22	3.6	6.7	3.9	6.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
23	3.6	6.7	3.9	6.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
24	3.6	6.7	3.9	6.7	3.9	3.9	3.9	3.9	33.9	6.7	3.8	3.8
25	3.6	6.7	3.9	6.7	3.9	3.9	3.9	3.9	6.7	6.7	3.8	1.4
26	6.7	6.7	3.9	6.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
27	3.6	6.7	3.9	6.7	3.9	3.9	3.9	3.9	3.9	3.9	3.8	3.9
28	6.7	6.7	3.9	6.7	3.9	3.9	3.9	3.9	3.9	3.9	3.8	3.9
29	6.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	1.4	3.9
30	6.7	3.9	6.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
31	6.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Sum	183.1		189.9		325.4					129.3		113.1
	166.7		148.9		243.2		303.5		248.8		157.0	
												114.0

Month	Extreme Year 1955			Total Acre-Feet	Period 1938-1955		
	Extreme Gage Feet		High		High	Low	Average
	High	Low	Day		Day	Day	Day
Jan.	.10	.07	† 1	6.7	†10	3.5	5.4
Feb.	.13	.07	14	10.6	† 1	3.9	6.5
Mar.	.13	.03	16	10.6	21	1.4	4.8
Apr.	.13	.03	† 2	10.6	12	1.4	6.3
May	2.23	.03	11	735	7	1.4	7.8
June	2.92	.07	4	1,140	† 1	3.9	10.8
July	2.13	.07	18	689	† 1	3.9	9.8
Aug.	2.49	.07	12	869	† 1	3.9	8.0
Sept.	1.35	.03	24	345	21	1.4	8.0
Oct.	.16	.03	14	14.8	15	1.4	4.2
Nov.	.10	.03	8	6.7	†25	1.4	3.8
Dec.	.07	.03	† 1	3.9	5	1.4	3.6
Yearly	2.92	.03		1,140		1.4	6.4
						4,605	11,095
							31,995.7
							2,066.7

[†] Estimated [‡] And other days

SAN FELIPE CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Water-stage recorder at Silos farm road bridge 1.75 miles south of Del Rio, Texas and 2 miles above the confluence with the Rio Grande. This stream enters the Rio Grande 695.2 river miles below the American Dam at El Paso, Texas and 12.2 river miles below the gaging station on the Rio Grande below Diablo Dam site. The zero of the gage is 875.05 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 22 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Rating curves based on low and medium-flow measurements by wading or from bridge and high-flow measurements by slope-area computations. Records available: September 1, 1931 through December 1955.

REMARKS: Municipal diversions at Del Rio and irrigation diversions greatly modify the flow of this spring-fed creek at this station. Backwater from the Rio Grande reaches this station when the Rio Grande near Del Rio reaches a stage of 15 feet, or a flow of about 60,000 second-feet. The highest gage height of record was 26.89 feet on June 28, 1954 caused by combined creek flow and backwater from the Rio Grande.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 45,000 second-feet on June 14, 1935, with a gage height of 23.20 feet. Min. .4 second-foot on July 20, 1953.

Average Flow in Second-Feet

Daily:	Max.	" 16,200	June 14, 1935	Min.	1.5	July 21, 1953
Monthly:	Max.	* 805	June 1935	Min.	4.6	July 1953
Yearly:	Max.	* 136	1935	Min.	25.1	1953

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1	90.4	58.6	61.1	50.4	30.3	38.1	22.9	28.8	28.6	43.5	52.2	68.1	
2	94.6	55.6	65.2	47.6	27.1	38.1	23.0	30.2	27.8	39.6	52.5	68.1	
3	94.2	55.8	63.2	48.6	26.2	37.3	16.7	29.5	27.0	40.4	52.0	66.2	
4	93.8	56.0	63.1	46.8	24.6	47.8	16.8	28.2	27.7	40.4	53.1	66.2	
5	93.5	58.3	64.1	46.1	25.4	49.0	15.2	28.8	27.0	42.2	53.5	66.1	
6	92.0	58.5	66.2	41.4	23.8	42.9	15.9	28.2	26.3	43.3	53.8	65.2	
7	90.4	57.7	64.0	44.4	22.4	* 42.8	16.6	29.5	26.2	42.8	54.9	64.3	
8	91.2	56.8	64.0	45.4	21.6	* 38.8	16.2	28.8	25.6	44.7	68.8	64.3	
9	90.8	57.0	61.9	43.8	22.4	* 35.6	17.5	29.5	25.6	45.0	69.2	61.3	
10	89.3	57.2	59.7	40.1	24.6	* 35.6	23.2	35.3	25.6	45.3	69.4	58.3	
11	91.2	57.4	" 56.7	39.3	48.9	* 33.4	22.7	57.0	26.8	49.6	69.8	59.9	
12	94.3	57.5	54.7	37.6	32.8	* 28.9	19.7	90.2	26.8	49.0	63.7	60.5	
13	93.1	57.7	" 52.7	36.0	27.1	* 25.6	19.2	40.9	28.2	50.1	59.5	59.3	
14	94.0	56.9	50.7	35.2	25.4	* 21.7	16.9	44.4	26.2	50.4	59.8	59.1	
15	93.9	58.1	50.7	31.0	479	* 21.1	18.9	37.3	26.2	51.5	61.0	57.9	
16	93.8	59.4	50.8	29.4	204	*	21.1	16.6	32.9	25.6	53.4	60.1	57.6
17	92.5	58.8	55.7	31.3	52.3	21.5	19.7	32.0	24.9	52.1	60.1	57.3	
18	86.6	57.2	49.8	32.2	44.6	20.7	23.0	33.6	24.2	53.2	61.0	56.1	
19	80.8	64.0	56.6	29.7	50.4	21.1	22.5	36.4	24.2	53.9	60.0	56.8	
20	79.6	66.6	52.9	29.7	44.6	19.6	25.5	37.2	23.6	53.1	60.0	57.4	
21	79.4	63.9	53.9	29.6	40.9	17.6	21.5	37.8	23.6	53.8	59.1	58.5	
22	78.1	58.2	60.9	30.4	44.6	18.6	21.6	32.8	23.6	54.6	58.2	59.5	
23	79.2	58.7	58.8	29.6	42.8	18.4	21.1	29.7	25.6	55.4	61.8	60.6	
24	79.0	58.2	53.0	31.3	40.9	20.0	23.6	29.0	*	63.2	56.3	63.6	
25	76.6	60.2	54.0	30.3	41.8	19.8	24.3	29.0	*	54.4	64.5	61.9	
26	75.4	63.2	55.9	30.3	40.9	22.2	23.8	28.8	35.9	51.0	64.5	65.8	
27	76.3	66.4	56.9	32.0	40.9	21.2	24.5	29.5	38.9	52.6	64.4	69.6	
28	74.0	61.4	56.0	30.3	37.3	19.7	25.2	29.4	42.7	54.2	65.3	69.8	
29	73.1	54.1	51.1	27.9	38.2	20.2	26.0	28.0	43.5	54.1	66.2	70.1	
30	73.3	51.1	51.1	29.5	39.1	21.2	26.7	28.6	43.5	54.0	69.0	70.5	
31	65.9	51.2	31.2	38.2	28.1	29.8	28.1	39.8	54.0	54.0	73.6		
Sum			1,655.3	1,087.2	*	839.6	1,071.1	1,537.9	1,950.7				
2,650.3			1,769.6	1,703.1		655.1	904.2	1,831.0					

Current Year 1955

Period Sept. 1931-1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total	Acre-Feet		
	High	Low	Day	High	Low	Day		Average	Maximum	Minimum
Jan.	1.08	.75	2	97.0	31	57.4	85.5	5,260	3,712	7,070
Feb.	.81	.66	127	69.5	17	51.7	59.1	3,280	2,882	8,630
Mar.	1.43	.57	19	143	18	46.0	57.1	3,510	2,490	5,030 *
Apr.	.66	* .29	1	55.3	125	* 24.6	36.2	2,160	2,728 *	8,120
May	8.10	.19	15	2,600	8	16.5	54.9	3,380	3,955 *	14,800
June	1.76	.47	4	141	22	13.5	* 28.0	*	1,670 *	5,372
July	1.42	.44	1	93.8	8	11.4	21.1	1,300 *	3,198 *	8,800
Aug.	3.62	.52	12	494	22	19.7	34.6	2,120	2,873	6,060
Sept.	1.68	.56	24	136	118	21.2	30.1	1,790	4,189	19,100
Oct.	.98	.73	24	60.8	3	36.6	49.6	3,050	3,777	8,470
Nov.	1.24	.84	8	87.7	5	49.5	61.0	3,630	3,044	5,570
Dec.	1.12	.89	31	76.5	18	53.5	62.9	3,870	3,065	5,870
Yearly	8.10	.19		2,600		11.4	48.4	35,020	41,285 *	98,137
										18,201

* Estimated * Partly estimated † And other days

PINTO CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Water-stage recorder and concrete control dam, .6 mile below the Del Rio-Eagle Pass highway and 5.5 miles above the confluence with the Rio Grande. This creek enters the Rio Grande 717.7 river miles below the American Dam at El Paso, Texas. The zero of the gage was 854.61 feet above mean sea level, U.S.C. & G.S. datum. In July 1955, a new station was installed at a point 1.6 miles above the confluence with the Rio Grande, having a bubbler water-stage recorder on top of a ledge 45 feet above the creek bed, a solid rock and concrete station control, a cable with stand-up cable car equipped with winch and heavy weights. The zero of the gage at this location is 813.68 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 20 meter measurements during the year by wading and a continuous record of gage heights. The new station has a stable rating curve, defined at present, only by low-flow measurements by wading. Medium flows in 1955 were determined at the old station from rating curve based on measurements made from the cable prior to its destruction in 1948. Records available: November 22, 1928 through August 31, 1955 at the upper site and September 1 through December 1955 at the lower station.

REMARKS: Small irrigation diversions modify the flow of this spring-fed creek at this station. Backwater from the Rio Grande flood of June 1954 reached a gage height of 28.8 feet, or an elevation of 842.50 feet, at this new location on Pinto Creek.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 186,000 second-feet on June 24, 1948, with a gage height of 32.0 feet. Min. frequently no flow.

Average Flow in Second-Feet

Daily:	Max. * 28,200	June 24, 1948	Min. 0	Frequently
Monthly:	Max. * 953	June 1948	Min. 0	
Yearly:	Max. 105	1932	Min. 1.8	Frequently 1945

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1	6.2	5.6	4.5	3.3	.7	3.7	0	8.9	0	2.2	.8	2.8	
2	7.1	5.1	4.0	3.0	.6	3.0	0	110		1.9	1.0	2.8	
3	7.9	5.4	3.9	3.0	.5	2.7	0	3.8	0	1.7	1.0	2.9	
4	7.5	5.3	3.8	3.1	.5	602	0	2.0	0	1.4	1.0	3.1	
5	6.8	5.0	3.6	3.0	.5	65.8	0	1.8	0	1.3	.9	3.2	
6	5.8	5.8	3.1	3.2	.5	10.6	0	1.4	0	1.2	.8	3.2	
7	5.6	5.0	3.0	2.8	.3	5.9	0	.5	0	1.1	.8	3.2	
8	5.7	4.2	2.8	3.0	.3	3.6	0	.4	0	1.0	6.4	3.3	
9	6.0	4.2	2.9	3.2	.3	3.0	0	.3	0	1.0	5.8	3.3	
10	6.0	4.2	3.3	3.4	.3	2.6	0	20.5	0	.9	3.4	3.3	
11	5.7	3.4	3.4	3.4	.5	2.6	7.0	2.0	0	.9	2.2	3.4	
12	5.7	3.4	3.6	3.2	1.6	2.4	1.7	42.0	0	.8	2.1	3.4	
13	6.0	3.8	3.7	2.6	.7	1.9	1.0	29.6	0	.8	2.0	3.5	
14	5.9	4.1	3.0	2.3	.4	1.6	.5	6.8	0	.8	2.0	3.7	
15	6.6	4.3	2.9	2.4	816	1.6	.3	2.8	0	.8	2.3	3.7	
16	6.6	4.3	2.6	2.3	19.9	1.7	u	.2	1.5	0	2.5	3.7	
17	5.9	4.2	2.1	2.2	7.6	1.5	8.4	1.1	0	.8	2.3	3.7	
18	5.9	4.0	2.0	2.1	2.6	1.0	2.1	1.0	0	.7	2.2	3.8	
19	6.3	4.4	1.7	1.9	3.5	.9	1.8	1.1	0	.6	2.2	3.8	
20	6.9	3.7	4.9	2.0	8.2	.7	1.1	1.1	0	.6	2.3	3.9	
21	6.3	3.4	2.4	1.9	3.6	.5	.6	1.0	0	.6	2.3	3.9	
22	5.6	3.6	1.6	1.6	1.4	.4	.4	.9	0	.6	2.3	3.9	
23	6.6	3.7	1.7	1.4	.9	.3	.3	.8	0	.6	2.3	3.9	
24	6.3	3.8	2.3	* 1.3	.7	4.7	3.4	.5	1,940	.7	2.2	3.9	
25	6.3	3.9	2.6	* 1.2	.5	1.4	1.9	.3	361	.7	2.2	3.9	
26	5.9	4.4	2.6	* 1.2	.5	.8	.9	.3	47.8	.7	2.3	3.8	
27	5.6	4.7	2.5	* 1.0	.4	.6	.5	.3	19.4	.7	2.4	3.8	
28	5.6	4.8	3.0	* 1.0	.3	.4	.3	.3	8.6	.8	2.5	3.7	
29	5.6				105	u	.3	.2	4.9	.8	2.5	3.7	
30	5.6				.6	13.7	u	.1	.1	3.1	.8	2.5	3.8
31	5.6					6.0	u	0	0	.8		3.9	
Sum	191.1	121.7	94.1	67.3	998.5	728.3	32.7	243.3	2,384.8	29.1	67.5	109.9	

Current Year 1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total	Period Dec. 1928-1955		
	High	Low	Day	High	Low			Average	Maximum	Minimum
Jan.	3.46	3.38	3	8.2	†19	5.4	6.2	379	353	2,110 0
Feb.	3.40	3.29	1	5.9	†11	3.4	4.3	241	537	5,760 0
Mar.	3.51	3.17	20	9.3	22	0	1.6	187	430	2,500 0
Apr.	3.25	3.00	†10	3.5	30	.6	2.2	133	611	3,600 0
May	8.10	15	3,510	†7	.3	32.2	1,980	2,018	20,500	0
June	9.60	4	5,830	30	.1	24.3	1,440	*	4,312	* 56,700 0
July	3.85	24	53.2	† 1	0	1.1	64.9	2,280	30,000	0
Aug.	7.03	2	2,280	† 1	0	7.8	483	2,139	48,700	0
Sept.	7.87		24	5,700	† 1	0	79.5	4,730	1,718	17,300 0
Oct.	1.08	1	2.5	†19	.6	.9	57.7	697	4,000	0
Nov.	1.37	.83	8	9.2	† 1	.8	2.2	134	303	2,150 0
Dec.			+20	0	3.9	† 1	0	218	374	2,180 0
Yearly				5,830	0	13.9	10,047.6	*	15,772	76,259.3 1,325.2

* Estimated * Partly estimated † And other days Ø Mean daily

RIO SAN DIEGO AT JIMENEZ, COAHUILA

DESCRIPTION: Water-stage recorder and cable with sit-down cable car and masonry and concrete Cipoletti weir control for measuring flows up to 706 second-feet, located 4.4 miles west of Jiménez, Coahuila, and 5.0 miles above the confluence with the Rio Grande. This stream enters the Rio Grande 722.4 river miles below the American Dam at El Paso, Texas. The zero of the gage is 828.90 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on meter measurements made at high flows during previous years, the weir discharge table, and a continuous record of gage heights. The discharge during the year did not exceed the capacity of the weir, except on May 15, June 4 and 5, and August 31. Records available: 1922 through December 1955. The records from 1922 to September 1932 are considered doubtful.

REMARKS: Reservoirs and irrigation diversions modify the flow of this spring-fed stream at this station.

EXTREME FLOWS FROM RECORDS: **① Momentary:** Max. about 75,200 second-feet on September 18, 1941, with a gage height of 20.96 feet. Min. no flow occurred on several occasions during April, May, and June 1939, May and August 1952, and July and August 1953.

Average Flow in Second-Feet

Daily:	Max. * 23,200	Sept. 18, 1941	Min. 0	Occasionally
Monthly:	Max. 2,380	Oct. 1932	Min. 9.1	June 1953
Yearly:	Max. 527	1935	Min. 37.9	1939

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	63.2	74.9	52.3	52.3	32.8	42.0	24.0	42.0	74.9	42.0	42.0	42.0
2	63.2	74.9	52.3	52.3	32.8	32.8	24.0	42.0	100	42.0	42.0	52.3
3	63.2	74.9	42.0	52.3	32.8	42.0	24.0	42.0	52.3	42.0	42.0	42.0
4	74.9	74.9	42.0	52.3	32.8	297	24.0	42.0	24.0	42.0	42.0	42.0
5	74.9	63.2	42.0	52.3	32.8	340	24.0	42.0	42.0	42.0	42.0	42.0
6	74.9	63.2	52.3	42.0	32.8	100	24.0	42.0	42.0	42.0	42.1	42.0
7	74.9	63.2	52.3	42.0	42.0	87.2	16.2	42.0	42.0	42.0	32.9	42.0
8	63.2	63.2	52.3	42.0	32.8	63.2	9.9	42.0	42.0	42.0	63.2	42.0
9	63.2	63.2	52.3	42.0	32.8	63.2	9.9	42.0	52.3	42.0	52.3	42.0
10	63.2	63.2	52.3	42.0	42.0	52.3	16.2	42.0	52.3	42.0	42.0	32.8
11	63.2	63.2	52.3	52.3	42.0	52.3	16.2	42.0	52.3	42.0	42.0	32.8
12	63.2	63.2	42.0	42.0	159	52.3	24.0	100	52.3	42.0	42.0	32.8
13	74.9	63.2	42.0	42.0	129	52.3	24.0	114	52.3	42.0	42.0	32.8
14	74.9	63.2	42.0	42.0	74.9	42.0	16.2	52.3	52.3	42.0	42.0	32.8
15	63.2	74.9	42.0	42.0	403	42.0	16.2	42.0	52.3	42.0	42.0	32.8
16	63.2	74.9	42.0	32.8	100	24.0	9.9	32.8	42.0	42.0	42.0	42.0
17	87.2	63.2	42.0	42.0	63.2	24.0	9.9	32.8	42.0	42.0	42.0	42.0
18	87.2	63.2	52.3	42.0	52.3	16.2	260	32.8	42.0	42.0	42.0	42.0
19	87.2	63.2	52.3	42.0	63.2	16.2	87.2	32.8	42.0	42.0	42.0	42.0
20	74.9	63.2	42.0	42.0	63.2	16.2	52.3	42.0	42.0	42.0	42.0	42.0
21	74.9	63.2	63.2	32.8	63.2	9.9	9.9	32.8	42.0	42.0	42.0	42.0
22	63.2	63.2	63.2	24.0	63.2	9.9	9.9	24.0	42.0	42.0	42.0	52.3
23	63.2	63.2	63.2	32.8	52.3	9.9	16.2	32.8	42.0	42.1	42.0	42.0
24	63.2	52.3	63.2	42.0	52.3	16.2	24.0	42.0	52.3	42.0	42.1	63.2
25	63.2	52.3	63.2	42.0	52.3	16.2	24.0	32.8	42.0	42.0	42.1	52.3
26	63.2	52.3	63.2	32.8	52.3	24.0	32.8	24.0	42.0	42.1	52.3	52.3
27	63.2	52.3	63.2	32.8	42.0	24.0	42.0	42.0	42.0	42.0	52.3	42.0
28	63.2	52.3	52.3	32.8	42.0	24.0	42.0	42.0	42.0	42.0	42.0	42.0
29	74.9	52.3	32.8	143	24.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
30	87.2	52.3	32.8	63.2	24.0	42.0	105	42.0	42.0	42.0	42.0	42.0
31	74.9	52.3	52.3	52.3	42.0	42.0	208	42.0	42.0	42.0	42.0	52.3

Sum 1,785.3 1,230.2 1,639.3 1,516.9 1,302.0 1,319.5

2,172.2 1,615.8 2,174.3 1,038.9 1,416.4 1,293.2

Current Year 1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Low			Average	Maximum	Minimum
Jan.	2.95	2.89	†17	87.2	† 1	63.2	70.1	4,310	6,843	36,430
Feb.	2.92	2.85	† 1	74.9	†24	52.3	3,540	5,468	25,760	1,970
Mar.	2.92	2.82	21	74.9	† 3	42.0	52.1	3,200	5,254	27,040
Apr.	2.85	2.76	† 1	52.3	†21	24.0	41.0	2,440	5,323	21,650
May	4.53	2.79	15	1,170	† 1	32.8	70.1	4,310	* 13,203	* 120,200
June	5.12	2.69	4	1,780	†21	9.9	54.6	3,250	10,186	62,240
July	3.90	2.69	18	696	† 8	9.9	33.5	2,060	8,906	34,430
Aug.	4.10	2.72	31	837	†22	16.2	48.9	3,010	7,729	32,180
Sept.	3.15	2.69	24	175	3	9.9	47.2	2,810	* 14,129	* 1,250
Oct.	2.82	2.79	† 1	42.0	31	32.8	42.0	2,580	17,732	146,640
Nov.	2.92	2.79	8	74.9	† 5	32.8	43.1	2,570	10,989	68,290
Dec.	2.95	2.79	22	87.2	†10	32.8	42.6	2,620	7,416	45,160
Yearly	5.12	2.69		1,780		9.9	50.7	36,700	113,178	* 381,720
										27,460

* Partly estimated † And other days ④ Period 1932-1955

RIO SAN RODRIGO NEAR EL MORAL, COAHUILA

DESCRIPTION: Water-stage recorder and cable with sit-down cable car and reinforced concrete control weir for measuring flows up to 177 second-feet. This station is located 10.6 miles west of the town of El Moral, Coahuila, 19.3 miles northwest from Piedras Negras, Coahuila, and 11.2 river miles above the confluence with the Rio Grande. The stream enters the Rio Grande 735.4 river miles below the American Dam at El Paso, Texas. The zero of the gage is 879.95 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on meter measurements made during previous years, the weir discharge table, and a continuous record of gage heights. The 1955 discharge did not exceed the capacity of the weir, except on June 17 and August 12, 13, and 15. Records available: 1922 through December 1955. The records from 1922 to 1931 are considered doubtful.

REMARKS: The flow of this spring-fed stream is modified by irrigation diversions above this station.

EXTREME FLOWS FROM RECORDS: **④ Momentary:** Max. * 81,200 second-feet on September 7, 1932, with a gage height of 16.08 feet on the original gage (see Water Bulletin No. 16). Min. frequently no flow, which occurs at a gage height of zero foot.

Average Flow in Second-Feet

Daily:	Max. * 27,900	Sept. 7, 1932	Min. 0	Frequently
Monthly:	Max. 4,270	Sept. 1932	Min. 0	Several months 1939, 1952, & 1953
Yearly:	Max. 576	1932	Min. 7.4	1952

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	31.4	26.1	21.2	8.2	4.9	2.1	0	0	12.0	4.9	8.1	12.0
2	31.4	21.2	21.2	8.1	4.9	2.1	0	0	8.1	8.1	12.0	12.0
3	31.4	26.1	21.2	8.1	4.9	2.1	0	0	8.1	12.0	8.1	12.0
4	31.4	21.2	21.2	8.1	4.9	2.1	0	0	4.9	12.0	8.1	12.0
5	31.4	21.2	21.2	8.1	4.9	0	0	0	4.9	12.0	8.1	8.1
6	31.4	26.1	21.2	8.2	4.9	0	0	0	2.1	12.0	8.1	12.0
7	31.4	26.1	21.2	12.0	4.9	0	0	0	2.1	8.1	8.1	8.1
8	31.4	31.4	21.2	8.2	4.9	0	0	0	2.1	8.1	21.2	8.1
9	31.4	31.4	21.2	12.0	4.9	0	0	0	2.1	8.1	21.2	8.1
10	31.4	21.2	21.2	12.0	5.0	0	0	0	2.2	8.1	12.0	8.1
11	31.4	21.2	21.2	12.0	8.1	0	0	0	2.1	8.1	16.2	8.1
12	31.4	21.2	21.2	8.2	12.0	0	0	110	2.1	8.1	12.0	8.1
13	31.4	21.2	16.2	5.0	12.0	0	0	110	2.1	5.0	12.0	12.0
14	31.4	21.2	12.0	8.1	5.0	0	0	48.0	2.2	5.0	12.0	16.2
15	31.4	21.2	12.0	8.1	12.0	0	0	172	2.1	5.0	12.0	12.0
16	31.4	21.2	16.2	8.1	8.1	0	0	64.3	2.1	5.0	12.0	12.0
17	31.4	21.2	16.2	8.1	8.1	96.8	0	37.4	2.2	5.0	12.0	16.3
18	31.4	21.2	16.2	8.1	8.1	12.0	12.7	26.1	2.1	4.9	12.0	16.3
19	31.4	21.2	16.2	8.1	5.0	2.1	2.0	26.1	2.1	8.1	12.0	16.2
20	31.4	21.2	21.2	8.1	5.0	0	0	21.2	2.1	12.0	8.1	21.2
21	31.4	21.2	12.0	8.1	2.1	0	0	21.2	2.2	12.0	8.1	21.2
22	31.4	21.2	12.0	8.1	2.1	0	0	16.2	2.1	12.0	12.0	21.2
23	31.4	21.2	12.0	8.1	2.1	0	0	12.0	2.1	8.1	12.0	21.2
24	31.4	21.2	12.0	8.1	2.1	0	0	12.0	2.1	12.0	16.2	21.2
25	31.4	21.2	12.0	8.1	0	0	0	12.0	2.2	12.0	12.0	16.3
26	31.4	21.2	12.0	8.1	0	0	0	12.0	2.1	12.0	21.2	16.3
27	31.4	21.2	12.0	8.1	0	0	0	12.0	2.1	12.0	12.0	16.2
28	26.1	21.2	12.0	8.1	2.1	0	0	8.1	2.1	12.0	12.0	16.2
29	26.1	21.2	12.0	8.1	37.4	0	0	8.1	4.9	12.0	12.0	16.2
30	26.1	21.2	12.0	8.1	12.0	0	0	8.1	4.9	12.0	12.0	16.2
31	26.1	21.2	12.0	8.1	5.0	0	0	42.4	12.0	12.0	16.2	16.2
Sum	633.6	255.9	119.3					779.2	287.7		374.0	437.3
	952.2	512.6	197.4					14.7	96.6			

Current Year 1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Period 1932-1955		
	High	Low	Day	High	Low			Average	Maximum	Minimum
Jan.	.30	.23	†17	37.4	†18	26.1	30.7	1,890	3,161	14,850
Feb.	.26	.20	† 8	31.4	† 2	21.2	22.6	1,260	2,552	11,580
Mar.	.23	.10	2	26.1	31	8.1	16.5	1,020	2,296	9,900
Apr.	.13	.07	† 8	12.0	†12	4.9	8.5	508	2,585	21,160
May	.72	0	29	142	†24	0	6.4	392	5,369	42,330
June	1.44	0	17	424	† 6	0	4.0	237	5,921	41,660
July	.49	0	18	79.5	† 1	0	.5	29.2	3,601	12,170
Aug.	1.18	0	15	307	† 1	0	25.1	1,550	4,347	23,580
Sept.	.30	0	1	37.4	15	0	3.2	192	* 18,302	* 253,960
Oct.	.13	.07	† 3	12.0	† 1	4.9	9.3	571	8,866	81,360
Nov.	.23	.10	8	26.1	† 1	8.1	12.5	742	4,572	24,450
Dec.	.23	.07	23	26.1	† 9	4.9	14.1	867	3,754	19,060
Yearly	1.44	0		424		0	12.8	9,258.2	* 65,326	5,353

* Partly estimated † And other days * Period 1932-1955

**RETURN FLOW TO THE RIO GRANDE AT MAVERICK POWER PLANT
NEAR EAGLE PASS, TEXAS**

DESCRIPTION: A part of the water diverted from the river into the Maverick Canal is returned to the Rio Grande through the hydroelectric power plant near Eagle Pass, Texas, at a point about 32.2 canal miles below the point of diversion, and about 744.9 river miles below the American Dam at El Paso, Texas.

RECORDS: Based on records furnished by the Maverick County Water Control and Improvement District No. 1, showing hourly manometer readings of discharge, in cubic feet per second, through each turbine at the Central Power and Light Company hydroelectric power plant. The mean daily discharge computed from the manometer readings have been multiplied by a factor to make them agree with periodic current meter measurements of flow made under stable flow conditions by hydrographers of this Commission. Records available: January 1949 through December 1955.

REMARKS: This power plant began operating April 16, 1932, with hydroelectric power generating facilities for 12,000 kw. Because the September 1932 flood washed out the upper end of the Maverick Canal, this plant did not operate from September 2, 1932 until March 17, 1937. Since then, however, it has operated continuously except for 44 days in 1953 when shortage of water prevented operation and from June 30 to July 20, during the flood of 1954, and while the canal was being repaired.

Average Flow in Second-Feet

Daily:	Max. 1,390	May 27, 1951	Min. 0	Frequently 1953 and 1954
Monthly:	Max. 1,160	June 1950	Min. 14.1	June 1953
Yearly:	Max. 1,020	1950	Min. 443	1953

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	759	688	595	417	338	190	262	717	910	598	627	724
2	728	# 673.7	572	407	309	163	493	685	918	629	612	754
3	740	630	544	413	411	170	539	713	915	644	621	759
4	745	699	508	386	545	293	475	720	842	647	606	765
5	761	712	507	400	612	320	454	718	793	622	594	756
6	737	726	509	386	604	387	415	716	763	619	639	785
7	704	755	554	378	528	666	316	723	731	627	611	786
8	698	759	546	352	601	696	306	727	714	665	679	790
9	750	746	528	371	624	613	329	729	733	664	761	777
10	739	729	531	335	697	526	389	581	729	682	814	768
11	731	697	545	341	405	488	346	583	732	710	781	762
12	747	643	526	344	232	427	296	805	718	729	817	766
13	738	678	525	335	279	412	255	727	702	698	822	761
14	734	692	512	345	555	350	231	763	672	689	829	750
15	741	690	503	295	706	280	232	762	639	726	840	747
16	788	686	525	282	768	244	189	772	609	736	825	743
17	785	663	517	305	789	271	356	738	569	738	817	736
18	824	643	515	268	775	295	532	781	568	731	825	751
19	796	638	492	249	840	413	742	822	673	723	821	723
20	775	637	508	262	837	329	622	811	596	714	816	693
21	783	612	505	283	681	277	717	830	695	700	803	706
22	740	584	473	286	601	407	862	873	691	691	754	694
23	768	584	487	292	556	318	876	827	691	689	753	682
24	797	581	508	299	505	317	879	807	747	682	715	709
25	794	592	481	287	451	438	784	843	663	675	650	721
26	764	573	498	280	418	402	801	834	648	634	671	729
27	764	593	516	315	365	242	842	884	640	643	664	717
28	743	599	457	389	288	193	694	874	595	659	646	708
29	716		405	338	306	318	707	819	634	647	636	717
30	705		387	309	245	325	690	803	632	645	673	730
31	694		377		198		741	882		623		723
Sum			18,502.7	9,949	10,770	23,869	21,162	20,879	22,932			
23,288			15,656	16,069	16,372					21,722		

Current Year 1955

Month	Extreme Gage		Extreme Second-Feet		Average Second- Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	Day			Average	Maximum	Minimum
Jan.			18	824	31	694	751	46,200	48,543
Feb.			8	759	26	573	661	36,700	41,971
Mar.			1	595	31	377	505	31,100	42,243
Apr.			1	417	19	249	332	19,700	35,997
May			19	840	31	198	518	31,900	44,197
June			8	696	2	163	359	21,400	43,949
July			24	879	16	189	528	32,500	40,026
Aug.			27	884	10	581	770	47,300	49,143
Sept.			2	918	18	568	705	42,000	51,229
Oct.			17	738	1	598	674	41,400	48,814
Nov.			15	840	5	594	724	43,100	45,343
Dec.			8	790	23	682	740	45,500	48,386
Yearly				918		163	606	438,800	539,841
								740,000	320,701

Ø Mean daily # Includes 20.7 second-feet spill

RIO GRANDE AT EAGLE PASS, TEXAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car and winch, located .5 mile above the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila, and 754.6 river miles below the American Dam at El Paso, Texas. The zero of the gage is 682.91 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 149 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: May 1900 to March 1914; August 1914 to April 1916; September 1916; September and October 1917; October 1918; September and October 1919; August and September 1920; June 1922; September, November, and December 1923; and January 1924 through December 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: The greatest recorded flow was **964,100 second-feet, which occurred June 29, 1954, with a gage height of 53.51 feet. Well-authenticated information establishes the occurrence of a flood in June 1865 with an estimated discharge of 1,236,000 second-feet and a gage height of 56.00 feet on the present gage. The lowest recorded flow was 24.4 second-feet, which occurred June 22, 1953, with a gage height of .07 foot.

Average Flow in Second-Feet

Daily:	Max. 572,100	June 28, 1954	Min. 30.7	June 22, 1953
Monthly:	Max. 48,000	Sept. 1932	Min. 248	Apr. 1953
Yearly:	Max. 9,180	1932	Min. 978	1953

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,200	1,090	901	646	487	530	614	3,410	9,150	3,850	1,840	1,420
2	1,200	1,080	886	604	487	547	784	4,450	6,780	3,780	1,760	1,470
3	1,200	1,080	893	593	1,430	477	1,230	5,190	5,330	4,270	1,710	1,470
4	1,200	1,080	904	604	3,640	487	989	3,960	4,870	4,590	1,610	1,420
5	1,200	1,080	837	611	2,270	7,240	869	4,060	3,850	4,270	1,610	1,420
6	1,240	1,130	869	590	1,790	7,840	780	4,060	3,210	4,060	1,710	1,420
7	1,240	1,130	805	568	1,340	4,130	636	3,230	2,630	4,240	1,660	1,470
8	1,200	1,170	819	547	5,160	2,990	576	3,010	2,370	9,220	1,870	1,460
9	1,150	1,160	837	572	3,600	1,920	788	2,600	2,370	6,280	1,870	1,460
10	1,160	1,180	879	572	2,310	1,830	840	2,640	2,190	4,870	1,840	1,460
11	1,160	1,200	876	569	8,020	1,240	759	2,520	2,120	5,230	1,870	1,460
12	1,200	1,180	876	516	3,250	1,020	632	4,520	2,120	5,860	1,840	1,380
13	1,240	1,170	876	512	1,840	904	572	4,840	1,910	5,470	1,760	1,340
14	1,290	1,150	879	463	1,510	918	501	4,310	1,780	4,700	1,840	1,380
15	1,240	1,120	830	441	3,090	728	554	3,920	1,780	4,240	1,850	1,290
16	1,240	1,130	830	434	3,880	650	480	3,230	1,710	4,060	1,870	1,250
17	1,240	1,110	840	431	3,340	583	2,770	3,270	1,570	3,960	1,840	1,250
18	1,240	1,080	848	424	3,810	1,080	3,740	2,330	1,450	3,710	1,840	1,250
19	1,240	1,060	812	445	2,150	1,320	1,670	3,310	2,520	3,400	1,760	1,250
20	1,240	1,040	929	438	2,160	1,470	10,630	4,170	1,950	3,100	1,710	1,250
21	1,190	1,020	1,150	438	1,550	1,880	5,510	2,900	2,380	2,740	1,600	1,250
22	1,200	1,010	872	410	1,170	3,050	9,290	7,660	2,860	2,560	1,550	1,250
23	1,210	993	886	420	989	1,550	7,030	11,690	2,740	2,470	1,550	1,250
24	1,170	947	798	431	946	1,250	6,890	7,660	6,570	2,370	1,510	1,250
25	1,170	933	710	438	904	1,730	6,000	5,860	42,380	2,260	1,420	1,250
26	1,170	905	618	438	724	1,420	4,170	4,060	41,320	2,150	1,380	1,290
27	1,170	912	625	410	667	1,030	3,670	4,870	14,900	2,120	1,380	1,290
28	1,120	916	632	696	667	780	2,860	4,800	14,160	2,010	1,380	1,290
29	1,130	607	607	696	957	2,250	5,160	7,450	1,960	1,290	1,290	1,290
30	1,130	622	501	1,080	756	2,190	5,230	5,190	1,960	1,290	1,340	1,290
31	1,100	636	547			2,360	6,430	1,870				
Sum	30,056	15,369	65,504	52,307	82,634	138,850	201,610	50,010	41,610			
	37,080	25,382										

Current Year 1955

Period 1924-1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total	Acre-Feet		
	High	Low	Day	High	Low			Average	Maximum	Minimum
Jan.	2.43	2.26	14	1,290	31	1,100	1,200	73,550	158,650	365,000
Feb.	2.33	2.17	11	1,200	26	904	1,070	59,620	141,395	398,200
Mar.	2.46	1.90	21	1,540	31	604	819	50,350	132,516	247,440
Apr.	2.26	1.61	28	1,070	27	392	512	30,480	127,390	270,700
May	6.96	1.67	11	12,610	† 2	427	2,110	130,000	215,858	* 918,000
June	7.58	1.61	5	14,970	3	374	1,740	103,800	323,685	2,794,000
July	7.58	1.57	20	14,970	16	353	2,670	163,900	258,374	* 1,255,000
Aug.	7.09	2.85	23	13,100	19	2,090	4,480	275,400	262,207	* 947,000
Sept.	16.31	2.53	25	59,330	18	1,340	6,720	399,900	503,340	3,079,000
Oct.	6.14	2.76	8	9,820	31	1,760	3,790	233,300	377,187	1,680,300
Nov.	2.92	2.33	† 9	2,010	29	1,170	1,670	99,190	181,847	512,800
Dec.	2.62	2.33	† 8	1,550	†20	1,170	1,340	82,530	157,598	369,760
Yearly	16.31	1.57		59,330		353	2,350	1,702,020	2,840,047	6,946,510
										708,110

* Partly estimated † And other days ** Determined by slope-area calculations

RIO ESCONDIDO AT VILLA DE FUENTE, COAHUILA

DESCRIPTION: Water-stage recorder located on the downstream side of the highway bridge over Rio Escondido on the outskirts of Villa de Fuente, 3.1 miles southwest of Piedras Negras, Coahuila, and 3.7 miles above the confluence with the Rio Grande. The cable and cable car are located 1.2 miles upstream at the previous station site. This stream enters the Rio Grande 758.2 river miles below the American Dam at El Paso, Texas. The zero of the gage is 708.78 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 51 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: 1922 through December 1955. Records from 1922 to September 1932 are considered doubtful.

REMARKS: Diversions and drainage returns modify the flow of this spring-fed stream at this station. Backwater from the Rio Grande reached an elevation of 729.92 feet during the flood of June 1954.

EXTREME FLOWS FROM RECORDS: @ Momentary: Max. 24,000 second-feet on June 29, 1936, with a gage height of 19.13 feet. Min. .4 second-foot on November 4, 1934, and several days in June, July, and August 1933.

Average Flow in Second-Feet

Daily:	Max. 6,710	June 29, 1936	Min. .4	Several days 1953
Monthly:	Max. 647	Oct. 1932	Min. 1.0	Sept. 1945; June 1955
Yearly:	Max. 83.2	1935	Min. 11.0	1943

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.0	1.4	2.9	1.5	1.4	1.5	1.4	4.2	2.9	1.4	1.4	1.4
2	5.7	1.4	2.9	1.4	1.4	1.5	1,410	4.2	1.4	1.4	1.4	2.8
3	5.3	2.8	2.9	1.4	1.4	1.4	791	4.2	.7	1.4	1.4	1.5
4	4.9	4.3	2.8	1.4	1.4	1.5	55.1	4.2	4.2	1.4	1.4	1.5
5	4.9	4.2	1.4	1.4	1.4	1.4	19.1	2.8	4.2	1.4	1.4	1.4
6	4.6	4.2	1.4	1.4	1.4	1.5	14.1	2.8	2.8	1.4	1.4	1.4
7	4.2	4.2	1.4	1.4	1.4	1.4	12.0	2.8	2.9	1.4	1.4	1.4
8	3.9	4.2	1.4	1.4	1.4	.7	.7	2.8	2.8	1.4	1.4	1.4
9	3.5	4.2	1.4	1.4	1.4	.7	2.8	1.4	15.9	1.4	1.4	1.4
10	3.2	4.2	1.4	1.5	1.4	.7	2.8	1.4	2.9	1.4	1.4	1.4
11	2.8	4.3	1.4	1.4	1.4	.7	2.8	14.1	2.8	1.4	1.4	1.4
12	2.5	2.8	1.4	1.4	1.4	.7	1.4	19.1	2.8	1.4	1.4	1.4
13	2.5	2.8	1.4	1.4	5.7	.7	1.4	4.2	2.9	1.4	1.5	1.4
14	2.1	2.8	1.4	1.4	8.5	.7	1.4	2.8	4.2	1.4	1.5	1.4
15	1.8	4.3	1.4	1.5	12.7	1.4	1.4	164	4.2	1.5	1.5	1.4
16	1.4	4.2	1.4	1.4	12.0	1.4	112	784	4.2	1.5	1.5	1.4
17	1.4	4.2	1.4	1.4	2.8	1.4	265	43.4	4.2	1.5	2.8	1.4
18	1.4	4.2	1.4	1.4	1.4	.7	219	14.1	2.8	1.4	2.8	1.4
19	1.4	4.2	1.4	1.4	1.4	.7	71.0	77.7	2.8	2.8	2.8	1.4
20	1.4	4.2	1.4	1.4	1.4	.7	19.1	1.4	2.8	1.4	1.4	1.4
21	1.4	4.2	2.8	1.5	1.4	.7	9.9	6.0	1.4	2.8	1.5	1.4
22	1.4	4.2	1.4	1.4	1.4	.7	4.2	4.2	1.4	2.8	2.8	1.4
23	1.8	4.2	1.4	1.4	1.4	.7	4.2	4.2	2.9	2.8	2.8	1.4
24	1.8	4.2	1.4	1.4	1.4	.7	4.2	4.2	2.8	2.8	1.4	1.4
25	1.8	4.3	1.4	1.4	1.4	.7	4.2	4.2	2.9	2.8	1.4	1.4
26	1.8	2.8	1.4	1.5	1.4	.7	4.2	4.2	2.8	2.8	1.4	1.4
27	1.8	2.8	1.4	1.4	1.4	.7	4.2	4.2	2.8	1.4	1.4	1.5
28	1.8	2.8	1.4	1.4	1.4	1.4	4.2	2.8	1.4	1.4	1.4	1.5
29	1.8	—	1.4	1.4	1.4	1.4	4.2	1.4	1.4	1.4	1.4	1.5
30	1.4	—	1.4	1.4	1.4	1.4	4.2	60.0	1.4	1.4	1.4	1.5
31	1.4	—	1.4	—	1.4	—	4.2	101	1.4	1.4	1.4	1.4
Sum	83.1	102.6	50.7	42.5	77.4	30.4	3,062.5	1,369.7	95.6	56.3	49.5	45.4

Current Year 1955 Period Oct. 1932-1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Acre-Feet				
	High		Low	High				Average	Maximum	Minimum		
	High	Low		Day	Day							
Jan.	.66	.52	1	6.0	†16	1.4	2.7	165	2,163	15,990		
Feb.	.13	.10	† 4	4.3	† 1	1.4	3.7	204	1,456	9,990		
Mar.	.20	.07	20	7.8	† 5	1.4	1.6	101	1,264	179		
Apr.	.07	.07	† 1	1.5	† 1	1.4	1.4	84.3	1,520	6,910		
May	.56	.03	15	36.7	† 2	.7	2.5	154	4,023	84.3		
June	.07	.03	† 1	1.5	† 8	.7	1.0	60.3	2,655	23,850		
July	7.55	.07	2	5,650	† 1	1.4	98.8	6,070	2,087	101		
Aug.	4.89	.07	16	2,440	† 9	1.4	44.2	2,720	* 2,295	77.8		
Sept.	1.02	.03	9	112	3	.7	3.2	190	3,105	57.5		
Oct.	.10	.03	† 19	2.8	† 4	.7	1.8	112	3,045	21,590		
Nov.	.10	.07	† 17	2.8	† 1	1.4	1.6	98.1	1,934	39,790		
Dec.	.10	.07	† 1	2.8	† 1	1.4	1.5	90.0	1,977	109		
Yearly	7.55	.03		5,650	.7	13.9	10,048.7	27,524	60,241	98.1		

* Partly estimated † And other days @ Period October 1932-1955

**RIO GRANDE AT SAN ANTONIO CROSSING
NEAR VILLA GUERRERO, COAHUILA**

DESCRIPTION: Bubbler-type water-stage recorder, operated with bottled nitrogen gas, located on high ground about 1,000 feet from the river at San Antonio Crossing, .5 mile below Cuervo Creek, which marks the lower end of the Maverick Irrigation District, 34.8 river miles below Eagle Pass, Texas and Piedras Negras, Coahuila, 5 miles northeast of Villa Guerrero, Coahuila, and 789.4 river miles below the American Dam at El Paso, Texas. On July 1, 1955, the zero of the staff gage was changed from 579.72 to 581.61 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 6 low-flow meter measurements during the year, 5 by the United States and 1 by the Mexican Section of this Commission, and a continuous record of gage heights. Computations are based on a stable rating curve for low stages and an extension of the curve for medium and high stages. Records available: March, April, May, October, November, and December 1952, with some days missing; January 1 through August 20, 1953; September 23, 1953 through June 14, 1954; and May 27 through December 1955, with some days missing.

REMARKS: After its destruction by the June 1954 flood, this station was re-activated on May 27, 1955 as a bubbler installation. The June 1954 flood reached an elevation of 624.31 feet at this station, with a discharge of 912,000 second-feet, determined by slope-area calculations.

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1						1,010	* 1,050		7,350	5,340	1,830	1,400
2						941	1,130		6,990	* 4,480	1,780	1,450
3						884	3,050		5,200	3,860	1,700	1,440
4						875	1,810		4,590	4,780	1,680	1,450
5						" 4,530	1,250		3,860	* 4,050	1,630	1,430
6						" 6,220	1,120		3,500	" 3,450	1,700	1,430
7						" 4,510	1,020		2,750	" 3,350	1,700	1,430
8						" 3,270	861		2,510	6,860	1,780	1,430
9						2,040	833		2,770	* 6,820	2,030	1,450
10						* 1,600	1,140		2,440	* 4,460	2,060	1,450
11						* 1,290	1,200		2,260	4,340	1,980	1,430
12						* 1,190	1,040		2,240	5,200	1,880	1,390
13						* 1,160	932		2,180	5,110	1,810	1,370
14						1,120	842		2,010	4,460	1,780	1,330
15						1,090	742		1,960	4,100	* 1,750	1,320
16						1,000	759		1,890	3,910	" 1,720	1,310
17						916	* 5,440		1,720	3,880	" 1,680	1,280
18						884	6,090		1,600	3,720	" 1,650	1,300
19						1,240	3,200		1,590	3,370	" 1,630	1,330
20						1,900	* 3,390	5,180	2,760	3,120	" 1,600	1,300
21						" 1,630	" 5,460	3,530	1,730	2,890	" 1,570	1,300
22						" 3,310	" 6,470	4,950	2,920	2,650	* 1,570	1,310
23						2,490	6,540	9,510	2,460	2,540	1,470	1,330
24						1,610	6,340	* 8,960	4,780	2,500	1,440	1,310
25						1,760	6,210	* 5,980	22,000	2,400	1,400	1,310
26						1,900	6,140	* 4,670	* 43,000	2,250	1,370	1,360
27						916	4,670	4,640	16,800	2,120	1,370	1,360
28						1,610	3,330	4,610	13,800	1,990	1,400	1,350
29						900	2,480	4,720	9,690	1,930	1,390	1,350
30						1,110	1,900	4,830	6,810	1,890	1,350	1,360
31						1,290	1,350	2,030	6,280	1,890		
Sum								*	88,509	186,160	* 49,700	42,430
								"	56,540	113,710		

Month	Current Year 1955						Period # 1952-1955				
	Extreme Gage Feet		Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Acre-Feet				
	High	Low	Day	Day			Average	Maximum	Minimum		
Jan.							57,115	60,500	53,730		
Feb.							46,285	49,300	43,270		
Mar.							50,100	60,150	38,100		
Apr.							118,985	211,000	26,970		
May							124,070	230,000	18,140		
June	7.56	3.58	5	" 11,200	+17	844	" 1,880	" 112,000	" 60,130	* 112,000	8,260
July	" 5.94	1.31	17	" 14,900	15	691	* 2,860	* 176,000	* 102,065	* 176,000	28,130
Aug.											
Sept.	10.43	2.02	26	* 50,500	19	1,490	6,210	369,000			
Oct.	4.59	2.16	8	8,260	31	1,760	3,670	226,000			
Nov.	2.44	1.83	9	2,250	30	1,300	* 1,660	* 98,600	* 64,697	* 98,600	43,970
Dec.	2.00	1.79	3	1,520	17	1,250	1,370	84,200	65,360	84,200	53,190
Yearly											

["] Estimated * Partly estimated † And other days # Some months missing

RIO GRANDE AT LAREDO, TEXAS

DESCRIPTION: Bubbler-type water-stage recorder, operated with bottled nitrogen gas, and cable with stand-up cable car, located .9 mile downstream from the highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas, and 885.8 river miles below the American Dam at El Paso, Texas. The zero of the gage is 347.90 feet above mean sea level, U.S.C. & G.S. datum. This station was established in January 1955 to replace the station 1.5 miles upstream which was destroyed by the June-July 1954 flood. An auxiliary recorder was used from January 1 until August 31, 1955. This recorder, located approximately 100 feet upstream, had a gage zero of 344.84 feet.

RECORDS: Based on 134 meter measurements during the year, 188 by the Mexican and 16 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting channel methods. Records available: May 1900 through December 1913; May, June, and October 1914; September 1916; September and October 1917; October 1918; September and October 1919; August and September 1920; June, November, and December 1922; and January 1923 through December 1955. Gage-height records are available for January, February, and March 1914.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: The greatest recorded flow was **716,900 second-feet, with a gage height of 61.35 feet, which occurred June 30, 1954. Much well-authenticated information indicates the occurrence of a greater flood in June 1865, with a gage height of 62.5 feet on the same gage, and a discharge of approximately 950,000 second-feet. The lowest recorded flow was zero, which occurred various days in June and July 1953, with a gage height of 2.30 feet.

Average Flow in Second-Feet

Daily:	Max.	576,000	June 30, 1954	Min.	0	Several days	June & July 1953
Monthly:	Max.	52,300	Sept. 1932	Min.	5.5		June 1953
Yearly:	Max.	10,100	1932	Min.	1,390		1952

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,500	1,540	1,170	689	622	1,140	1,430	2,300	11,550	5,690	2,110	1,720
2	1,430	1,580	1,060	710	622	901	2,710	2,510	9,570	4,700	2,040	1,680
3	1,570	1,610	1,010	643	498	614	3,640	3,810	7,620	4,100	1,980	1,740
4	1,540	1,540	1,130	692	487	480	2,770	4,550	5,650	4,240	1,900	1,770
5	1,570	1,580	1,030	682	961	473	1,960	4,630	4,980	5,090	1,820	1,770
6	1,540	1,650	947	671	3,020	2,990	1,110	3,740	4,200	4,520	1,800	1,770
7	1,540	1,910	862	756	2,210	6,960	922	4,030	3,640	4,310	1,990	1,730
8	1,580	1,830	904	749	1,780	5,510	816	3,640	3,120	4,200	2,330	1,740
9	1,540	1,750	943	678	2,060	3,850	710	2,990	2,780	7,490	2,460	1,730
10	1,540	1,750	992	607	5,120	2,880	657	2,810	2,890	7,380	2,400	1,740
11	1,540	1,680	961	600	3,310	2,230	1,000	2,490	3,220	5,120	2,370	1,760
12	1,610	1,680	886	628	5,370	1,830	1,370	3,100	2,830	4,770	2,270	1,760
13	1,580	1,650	1,020	692	5,300	1,330	1,020	4,770	2,710	5,790	2,220	1,740
14	1,610	1,610	978	678	3,370	1,050	809	6,920	2,590	5,690	2,150	1,670
15	1,610	1,540	996	607	2,140	893	667	12,960	2,300	5,090	2,100	1,670
16	1,610	1,540	922	597	1,630	851	583	15,430	2,050	4,660	2,140	1,620
17	1,650	1,540	876	590	3,280	791	537	6,390	2,010	4,200	2,160	1,610
18	1,610	1,500	872	551	3,600	653	3,300	3,920	1,910	4,170	2,050	1,620
19	1,650	1,470	904	526	3,520	565	6,110	2,740	1,880	3,990	2,010	1,610
20	1,650	1,470	893	544	3,160	569	4,240	2,380	1,730	3,710	2,040	1,600
21	1,680	1,400	886	544	2,100	1,120	5,050	4,590	2,630	3,440	1,990	1,600
22	1,610	1,330	791	530	2,060	1,700	8,300	3,570	2,220	3,290	1,910	1,610
23	1,610	1,330	946	523	1,760	2,040	6,570	4,700	2,720	3,050	1,910	1,600
24	1,610	1,300	946	515	1,310	2,710	7,950	10,170	2,750	2,930	1,840	1,620
25	1,580	1,220	865	505	1,050	1,760	6,640	8,900	4,480	2,780	1,790	1,560
26	1,650	1,150	781	487	929	1,240	6,390	5,900	25,460	2,670	1,760	1,480
27	1,650	1,220	862	487	865	1,460	4,730	47,300	38,490	2,510	1,730	1,500
28	1,610	1,150	858	505	738	1,310	3,920	4,590	17,020	2,370	1,700	1,520
29	1,610	—	816	459	1,320	1,030	3,490	4,770	13,070	2,310	1,750	1,520
30	1,610	—	894	445	2,150	985	2,740	4,910	8,020	2,230	1,760	1,580
31	1,650	—	841	—	1,640	—	2,420	12,390	—	2,160	—	1,630
Sum	42,520	28,842	17,890	67,982	51,915	94,561	165,330	196,090	128,650	60,480	51,270	
49,340												

Current Year 1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Period 1924-1955			
	High	Low	Day	High	Low			Average	Maximum	Minimum	
Jan.	4.17	3.87	31	1,720	2	1,400	1,590	97,870	161,539	351,700	
Feb.	4.36	3.67	7	1,950	26	1,150	1,520	84,340	143,972	41,050	
Mar.	3.71	3.28	1	1,230	31	664	930	57,210	134,031	223,400	
Apr.	3.41	2.82	8	812	30	445	596	35,480	135,970	316,300	
May	8.46	2.79	12	8,930	1	424	2,190	134,800	249,174	856,000	
June	8.27	2.79	7	8,480	† 4	424	1,730	103,000	330,839	1,994,000	
July	9.84	2.85	21	11,900	† 17	512	3,050	187,600	280,934	1,250,000	
Aug.	14.83	4.46	16	26,270	2	2,070	5,330	327,900	275,216	883,000	
Sept.	16.57	1.08	27	43,440	20	1,710	6,540	388,900	525,316	2,943,000	
Oct.	5.51	1.51	9	9,010	31	2,080	4,150	255,200	410,091	1,951,000	
Nov.	1.90	1.25	9	2,690	† 6	1,680	2,020	120,000	189,351	570,800	
Dec.	1.35	1.02	† 4	1,820	† 26	1,650	1,050	101,700	163,293	352,700	
Yearly	16.57	1.02		43,440	126	2,620	1,894,000	2,999,726	7,017,110	1,010,830	

† And other days ** Determined by slope-area calculations

RIO SALADO AT LAS TORTILLAS, TAMAULIPAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car and control wall with notch opening of 2,500 second-feet capacity, located 6.2 miles southeast of the town of Las Tortillas, Tamaulipas, 2 miles below the confluence of the Río Sabinas with the Río Salado, and 24.8 miles above the confluence of the Río Salado with the Rio Grande. This confluence is 946.1 miles below the American Dam at El Paso, Texas. The zero of the gage is 325.72 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 67 meter measurements during the year, a stable rating curve up to 2,500 second-feet, and a continuous record of gage heights. Computations by shifting channel methods for flows greater than 2,500 second-feet. Records available: September 9, 1953 through December 1955. Records are also available for a station at Cd. Guerrero, 18.6 miles downstream, from 1900 through 1913 and 1923 through September 8, 1953.

REMARKS: Reservoirs and irrigation diversions modify the flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 19,700 second-feet on September 3, 1955, with a gage height of 15.94 feet. Min. frequently no flow. Extreme flow data for the station at Cd. Guerrero, prior to 1954, may be found in previous bulletins.

Average Flow in Second-Feet ‡

Daily:	Max. 18,800	Sept. 3, 1955	Min. 0	Frequently
Monthly:	Max. 2,430	Sept. 1955	Min. 0	Frequently
Yearly:	Max. 292	1955	Min. 109	1954

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	523	0	0	2,740	255	9.2	3.9
2	0	0	0	0	0	152	0	290	11,440	484	12.7	2.5
3	0	0	0	0	0	60.7	0	388	18,820	219	16.6	3.2
4	0	0	0	0	0	17.3	0	84.8	11,340	144	12.7	3.2
5	0	0	0	0	0	2.5	0	68.5	2,690	144	12.7	3.2
6	0	0	0	0	0	54.0	0	26.8	629	123	16.6	3.2
7	0	0	0	0	0	593	0	6.4	463	123	12.7	6.4
8	0	0	0	0	0	699	0	2.5	554	123	16.6	6.4
9	0	0	0	0	0	234	0	0	618	840	117	3.9
10	0	0	0	0	0	133	0	0	540	685	261	3.2
11	0	0	0	0	77.7	63.9	0	0	798	357	143	3.2
12	0	0	0	0	1,100	26.8	0	614	3,280	235	192	3.2
13	0	0	0	0	424	9.2	0	360	2,300	166	123	3.2
14	0	0	0	0	116	2.5	0	2,180	4,520	133	77.0	3.9
15	0	0	0	0	47.0	.7	0	3,000	2,840	103	55.1	3.9
16	0	0	0	0	227	.7	0	2,690	1,140	103	31.4	3.2
17	0	0	0	0	2,430	0	0	4,660	629	85.5	21.5	3.2
18	0	0	0	0	582	0	0	791	420	69.6	21.5	3.2
19	0	0	0	0	207	0	0	242	583	62.2	16.6	2.5
20	0	0	0	0	636	0	.4	206	2,520	62.2	12.7	1.4
21	0	0	0	0	145	0	68.9	93.9	1,110	48.4	12.7	1.4
22	0	0	0	0	57.9	0	23.3	55.1	713	36.4	9.2	1.4
23	0	0	0	0	29.0	0	4.2	31.4	554	31.4	6.4	1.4
24	0	0	0	0	7.8	0	1.4	16.6	399	26.5	6.4	1.4
25	0	0	0	0	3.2	0	0	12.7	320	26.5	6.4	1.4
26	0	0	0	0	1.4	0	0	6.4	251	21.5	6.4	1.4
27	0	0	0	0	.7	0	0	3.9	219	31.4	6.4	.7
28	0	0	0	0	0	0	0	3.2	205	26.5	3.9	.7
29	0	0	0	0	96.4	0	0	3.2	191	16.6	3.2	.7
30	0	0	0	0	590	0	0	1.4	166	12.7	3.9	.7
31	0	0	0	0	1,840	0	0	147	0	12.7	0	.7
Sum	0	0	0	0	2,572.3	8,618.1	98.2	15,984.8	72,992	4,807.1	1,246.5	81.9

Month	Current Year 1955			Period Oct. 1953-1955							
	Extreme Gage Feet		High	Average Second-Feet		Total Acre-Feet	Acre-Feet				
	High	Low		Day	Day		Average	Maximum	Minimum		
Jan.				0	0	0	0	3.6	7.3	0	
Feb.				0	0	0	0	2.0	4.0	0	
Mar.			0	0	0	0	0	0	0	0	
Apr.			0	0	0	0	0	9,650	19,300		
May	3.51		17	3,020	↑ 1	0	278	17,090	31,160	45,230	17,090
June	2.07		1	961	↑ 17	0	85.7	5,100	3,575	5,100	2,050
July	.72		21	103	↑ 1	0	3.2	195	140	195	85.1
Aug.	4.99		17	5,400	↑ 1	0	516	31,700	15,852	31,700	3.2
Sept.	15.94	.75	3	19,710	1	113	2,430	144,800	73,830	144,800	2,860
Oct.	2.62	.26	9	1,610	↑ 30	12.7	155	9,530	14,113	25,890	6,920
Nov.	1.44	.13	10	441	↑ 29	3.2	41.6	2,470	2,167	2,610	1,420
Dec.	.23	.03	7	9.2	↑ 26	.7	2.6	162	* 110	169	0
Yearly	15.94			19,710		0	292	211,047	150,602	211,047	79,069

* Estimated * Partly estimated ↑ And other days † Period September 1953-1955

RIO GRANDE AT CHAPENO, TEXAS

DESCRIPTION: Water-stage recorder, located 2.5 miles below Falcón Dam, 11.2 miles above the confluence of the Río Alamo with the Rio Grande, and 973.4 miles below the American Dam at El Paso, Texas. A cable with stand-up cable car equipped for winch and heavy weights is located approximately 4,000 feet below the recorder. The zero of the gage is 171.52 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 46 meter measurements made during the year, 31 by the United States and 15 by the Mexican Section of this Commission. Computations by shifting channel methods. Records available: December 17, 1952 through December 1955.

REMARKS: This station was placed in operation on December 17, 1952. Except for tributary inflows below Falcón Dam, flow at this station, after August 25, 1953, was controlled largely by requested releases from Falcón Reservoir.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 22,600 second-feet on August 27, 1953, with a gage height of 7.98 feet, of which approximately 20,000 second-feet was observed to have come from an arroyo in Mexico immediately below Falcón Dam. Min. zero flow occurred on June 17 through July 1, 1953, before storage began at Falcón Dam.

Average Flow in Second-Feet ‡

Daily:	Max.	12,200	June 29, 1954	Min.	0	June 17 through July 1, 1953
Monthly:	Max.	8,550	May 1955	Min.	7.8	June 1953
Yearly:	Max.	3,810	1955	Min.	943	1953

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,580	6,360	2,580	5,820	8,150	5,630	3,820	1,080	2,120	783	3,040	387
2	3,040	6,120	2,410	6,170	8,000	5,410	2,810	1,190	1,060	971	3,000	717
3	4,460	5,980	2,010	6,660	8,070	5,780	3,020	1,450	623	971	2,530	1,000
4	5,820	5,980	1,820	6,470	8,420	5,790	2,920	1,430	104	847	2,290	1,210
5	5,780	5,980	1,830	6,470	8,310	5,840	2,770	1,510	90.1	712	2,800	1,250
6	4,520	5,980	1,830	6,490	8,370	6,130	2,290	1,700	78.5	783	3,360	1,190
7	4,900	5,810	1,820	6,530	9,330	6,910	1,800	1,830	79.9	898	3,160	1,100
8	5,350	5,600	1,640	6,450	9,930	6,450	1,570	1,780	170	1,280	1,970	1,070
9	5,530	5,490	1,340	5,960	10,000	6,310	1,080	1,610	388	1,390	928	1,330
10	4,840	5,180	1,540	3,940	10,700	7,290	748	1,610	105	1,060	1,110	1,360
11	4,610	4,990	1,640	2,530	10,600	7,910	631	1,450	167	771	1,410	1,160
12	6,730	5,080	1,820	6,080	10,500	8,000	254	1,440	211	673	1,660	1,030
13	6,550	5,080	1,940	5,740	11,400	8,080	348	2,040	92.6	474	1,900	1,180
14	6,150	5,080	2,030	5,780	11,200	8,000	609	4,250	74.3	532	1,880	1,370
15	6,340	4,760	2,260	5,540	10,100	8,000	724	4,460	70.6	915	1,710	1,390
16	6,380	4,130	2,100	5,370	8,970	8,140	656	4,360	54.3	1,160	1,230	1,820
17	6,570	4,240	2,170	5,140	8,600	8,370	667	4,380	51.0	1,160	1,010	2,840
18	7,020	4,320	2,340	5,070	8,430	8,910	678	4,410	49.9	1,280	1,360	5,900
19	7,020	4,150	2,670	5,000	8,400	8,970	667	4,160	57.8	1,350	1,340	5,820
20	7,000	3,460	3,110	5,000	8,850	9,040	621	3,270	53.2	1,530	1,290	5,450
21	7,030	3,040	3,110	5,080	9,230	9,070	466	3,270	51.0	1,940	1,360	5,070
22	7,390	2,600	3,120	5,440	9,380	8,820	509	3,290	49.9	2,200	1,420	4,750
23	7,080	2,200	3,220	5,980	8,390	8,270	614	4,440	49.9	2,220	1,320	4,730
24	6,740	2,050	3,220	6,240	8,640	8,460	614	5,640	108	2,180	1,470	5,130
25	6,430	2,040	3,420	6,450	6,490	8,030	614	4,880	244	1,900	1,480	5,580
Sum	123,470	82,690	174,980	265,030	220,460	39,695	98,100	7,881.0	43,560	55,578	93,764	
185,440												

Current Year 1955 Period 1953-1955

Month	Extreme Gage Feet		Extreme Second-Feet		Average Second-Feet	Total	Acre-Feet		
	High	Low	Day	Day			High	Maximum	Minimum
Jan.	5.70	3.52	22	7,980	1	2,090	5,980	368,000	206,067
Feb.	5.70	3.37	1	6,620	24	1,780	4,410	245,000	192,233
Mar.	4.98	3.11	130	5,880	9	1,280	2,670	164,000	169,400
Apr.	6.25	1.18	30	9,750	11	39.8	5,830	347,000	168,167
May	7.27	3.97	10	13,300	31	3,130	8,550	526,000	292,600
June	6.08	2.99	20	9,220	2	1,080	7,350	437,000	261,487
July	4.53	1.62	1	4,550	14	95.1	1,280	78,700	62,467
Aug.	5.25	2.89	23	6,790	1	928	3,160	195,000	131,267
Sept.	4.31	1.20	1	3,950	16	41.6	263	91,867	195,000
Oct.	3.94	2.46	31	3,070	13	458	1,410	86,400	52,500
Nov.	4.13	2.15	5	3,500	30	254	1,850	110,000	82,667
Dec.	5.62	1.27	27	7,850	1	48.9	3,020	186,000	124,500
Yearly	7.27	1.18		13,300		39.8	3,810	2,758,700	1,847,022
									2,758,700
									682,461

* Partly estimated † And other days ‡ Period December 1952-1955

RIO ALAMO AT CD. MIER, TAMAULIPAS

DESCRIPTION: Water-stage recorder and cable with sit-down cable car and reinforced concrete weir for measuring flows up to 177 second-feet, located 3.1 miles above the confluence of the Río Alamo with the Río Grande and .6 mile west of Cd. Mier, Tamaulipas, at a point called "El Paso del Cántaro". This stream enters the Río Grande 984.6 river miles below the American Dam at El Paso, Texas. On June 11, 1952, the recorder was moved from a point 230 feet above a new highway bridge to a point 285 feet below the bridge and 312 feet above the weir. The zero of the gage is 188.35 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 30 meter measurements made at high flows during the year, the weir discharge table at low flows, and a continuous record of gage heights. High-flow computations by shifting channel methods. Records available: July 1, 1923 through December 1955.

REMARKS: Small reservoirs and irrigation diversions modify the flow of this spring-fed stream at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. * 144,800 second-feet on September 11, 1948, with a gage height of 33.56 feet. Periods of no flow have occurred at times during all years of record, except 1934 and 1935.

Average Flow in Second-Feet

Daily:	Max. 87,230	Sept. 11, 1948	Min. 0	Frequently
Monthly:	Max. 5,170	Sept. 1948	Min. 0	Frequently
Yearly:	Max. 536	1953	Min. 16.4	1929

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1	0	0	0	0	0	9.2	0	0	639	848	2.5	1.8	
2	0	0	0	0	0	3.5	0	63.2	2,930	826	1.8	1.8	
3	0	0	0	0	0	2.1	0	19.8	3,280	215	1,220	1.8	
4	0	0	0	0	0	1.1	0	6.4	529	75.2	266	1.8	
5	0	0	0	0	0	.4	0	3.2	196	35.7	49.4	1.4	
6	0	0	0	0	0	106	0	.7	122	35.0	20.8	2.1	
7	0	0	0	0	0	46.3	0	0	72.0	27.9	9.5	2.5	
8	0	0	0	0	0	9.5	0	0	35.7	30.0	6.0	2.1	
9	0	0	0	0	0	2.8	30.0	0	586	396	9.9	1.8	
10	0	0	0	0	0	1.1	6.4	0	381	204	31.1	2.1	
11	0	0	0	0	622	.4	160	0	522	128	13.1	1.8	
12	0	0	0	0	295	0	127	0	2,270	85.1	7.4	1.0	
13	0	0	0	0	35.7	0	15.9	0	4,030	54.7	6.0	.7	
14	0	0	0	0	45.9	0	3.5	0	5,760	36.4	5.7	0	
15	0	0	0	0	16.6	0	1.1	6.0	1,710	24.7	3.5	0	
16	0	0	0	0	7.1	0	0	86.9	240	18.4	2.5	0	
17	0	0	0	0	4.9	0	0	65.3	115	13.1	2.5	0	
18	0	0	0	0	.7	0	385	16.2	59.3	10.6	2.5	0	
19	0	0	0	0	0	0	138	54.7	745	8.5	2.5	0	
20	0	0	0	0	0	0	12.7	309	4,030	6.7	2.1	0	
21	0	0	0	0	0	0	0	26.8	755	6.7	1.8	0	
22	0	0	0	0	0	0	0	2.5	306	6.0	1.1	0	
23	0	0	0	0	0	0	0	0	210	5.7	1.1	0	
24	0	0	0	0	0	0	0	0	.7	120	4.6	1.4	0
25	0	0	0	0	0	0	0	0	71.7	3.5	1.0	0	
26	0	0	0	0	0	0	0	0	44.1	3.2	1.0	0	
27	0	0	0	0	0	0	0	0	28.6	2.8	1.0	0	
28	0	0	0	0	0	0	0	0	21.5	2.5	1.0	0	
29	0	0	0	0	448	0	0	0	16.6	2.5	1.0	0	
30	0	0	0	0	228	0	0	0	32.8	2.5	1.0	.3	
31	0	0	0	0	35.7	0	0	114	0	2.5	0	.3	
Sum	0	0	0	0	1,739.6	182.4	885.3	780.7	29,858.3	3,121.5	1,676.2	23.3	

Current Year 1955 Period 1924-1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total	Acre-Feet		
	High	Low	Day	Day	Low			Acre-Feet	Average	Maximum
Jan.				0		0	0	3,940	34,920	0
Feb.				0		0	0	2,781	25,550	0
Mar.				0		0	0	2,841	19,830	0
Apr.				0		0	0	7,147	33,990	0
May	3.35		11	1,710	† 1	0	56.1	3,450	14,403	* 137,000
June	1.77		6	351	† 12	0	6.1	362	13,151	83,240
July	2.49		18	855	† 1	0	28.6	1,760	6,858	37,590
Aug.	2.30		20	699	† 1	0	25.2	1,550	20,208	205,700
Sept.	6.23	.23	14	6,990	† 9	13.1	995	59,220	38,621	307,900
Oct.	3.02	.07	1	1,430	† 27	2.5	100	6,190	15,738	84,630
Nov.	3.97	.03	3	2,960	† 25	0	55.9	3,320	3,600	21,940
Dec.	.07		† 6	2.5	† 13	0	.8	46.2	3,337	15,000
Yearly	6.23			6,990		0	105	75,898.2	132,625	387,800
	*	Partly estimated	† And other days	Ø Mean daily						11,908.7

CONTRIBUTIONS FROM RIO SAN JUAN

DESCRIPTION: The discharges reported below are summations of flows which entered the Rio Grande between the gaging stations at Roma and Anzalduas Dam site via various drains and the Rio San Juan channel. The confluence of the Rio San Juan and the Rio Grande is 1,007.4 river miles below the American Dam at El Paso, Texas, 4.9 river miles above the Fort Ringgold gaging station on the Rio Grande, and 9.4 river miles below Marte Gómez Dam on the Río San Juan.

RECORDS: The water reaching the Rio Grande above the Fort Ringgold gaging station was measured at open-channel gaging stations on the Rancherías and Los Fresnos drains, and the Río San Juan channel flow was measured at a station consisting of water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located opposite Camargo, Tamaulipas, about 3.1 miles above the confluence with the Rio Grande. The water reaching the Rio Grande below the Fort Ringgold gaging station was measured at open-channel gaging stations on the Puertecitos, Huizache, and Morillo drains. No water was released from Marte Gómez Reservoir for use in the United States during 1955. These records were obtained by the Mexican Section of this Commission. Records available: March 1, 1953 through December 31, 1955.

REMARKS: Storm water measured at the above-mentioned drains was deducted and is not reported here. In previous water bulletins, under this page heading, mention was made of additional water from drains not being accounted for in the tables. For this reason, the former period totals were not used here and new period totals were begun with 1953.

Above Fort Ringgold Station

Month	Current Year 1955						Period 1953-1955		
	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Acre-Feet	
	High	Low	Day	High	Low			Average	Maximum
Jan.			31	20.5	† 6	16.2	17.9	1,100	740
Feb.			1	20.5	22	16.2	17.9	996	565
Mar.			1	17.0	11	7.8	10.5	645	449
Apr.			†29	9.2	† 1	8.1	8.6	514	3,042
May			29	56.9	†19	8.8	11.3	697	950
June			1	11.3	†29	8.8	9.4	559	2,342
July			11	278	† 1	8.8	31.4	1,930	1,131
Aug.			17	470	† 1	13.1	64.6	3,970	24,277
Sept.			2	2,030	†27	12.7	188	11,200	102,357
Oct.			1	172	10	9.9	24.1	1,480	80,220
Nov.			† 1	12.4	† 9	11.7	11.9	709	13,606
Dec.			1	12.0	†19	9.2	10.0	614	2,110
Yearly				2,030		7.8	33.7	24,414	231,789
								637,700.4	24,414

Below Fort Ringgold Station

Month	Current Year 1955						Period 1953-1955		
	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Acre-Feet	
	High	Low	Day	High	Low			Average	Maximum
Jan.			26	73.5	9	17.0	43.1	2,650	1,997
Feb.			6	77.3	28	39.6	57.8	3,210	3,023
Mar.			1	38.5	23	23.3	30.6	1,880	2,033
Apr.			†28	90.8	1	29.3	56.6	3,370	2,370
May			1	89.7	19	71.3	79.4	4,880	4,113
June			1	114	30	73.8	92.9	5,530	4,283
July			1	70.6	†26	36.7	47.4	2,920	2,613
Aug.			†19	53.3	†29	21.2	35.3	2,170	1,409
Sept.			20	53.0	1	23.0	39.5	2,350	1,550
Oct.			1	24.0	22	17.3	19.7	1,210	1,560
Nov.			11	20.5	25	15.2	17.6	1,050	1,117
Dec.			16	18.7	†30	10.9	15.2	933	1,361
Yearly				114		10.9	44.4	32,153	28,069
								32.153	21,595

* Partly estimated † And other days Ø Mean daily

RIO GRANDE AT FORT RINGGOLD, RIO GRANDE CITY, TEXAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located about 1 river mile below Rio Grande City, Texas, 4.9 river miles below the confluence of the Río San Juan with the Rio Grande, and 1,012.3 river miles below the American Dam at El Paso, Texas. The zero of the gage is 100.00 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 63 meter measurements during the year, 62 by the United States and 1 by the Mexican Section of this Commission, and a continuous record of gage heights. Computations by shifting channel methods. Records available: January through December 1955 at this new station. Records composed of the addition of discharges of the Rio Grande at Roma, Texas and the Río San Juan at Santa Rosalía, Tamaulipas are available for May, June, and October 1914; September 1916; September and October 1917; October 1918; September and October 1919; August and September 1920; June 1922; September 1923; and January 1924 through December 1931. Records are also available for the station "Rio Grande near Rio Grande City" for 1932 through 1954.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. Except for tributary inflows and intervening diversions below Falcón Dam, flow at this station is controlled largely by releases from Falcón Reservoir, 41 miles upstream.

EXTREME FLOWS FROM RECORDS: The greatest recorded flow was 198,800 second-feet, which occurred September 5, 1932, at an elevation of 157.4 feet at the station 3 miles downstream. Zero flow occurred several days in June and July 1953.

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,990	6,450	2,510	5,640	8,000	5,650	4,670	1,340	5,710	833	2,780	1,100
2	2,640	6,180	2,490	5,750	7,950	5,290	3,020	1,280	6,700	2,330	2,890	478
3	2,860	5,940	2,230	6,140	7,790	5,600	2,860	1,380	6,930	1,770	3,310	803
4	5,050	5,890	1,960	6,380	8,180	5,560	2,900	1,450	2,670	1,260	3,080	1,060
5	5,180	5,880	1,850	6,390	8,240	5,790	2,670	1,430	1,010	1,010	2,430	1,220
6	4,650	5,910	1,850	6,380	7,840	5,800	2,640	1,500	925	822	3,220	1,280
7	4,540	5,870	1,860	6,460	8,640	6,410	2,000	1,660	454	956	3,310	1,280
8	4,980	5,600	1,860	6,530	9,380	7,120	1,770	1,700	725	1,020	2,940	1,150
9	5,130	5,510	1,600	6,260	9,840	6,170	1,670	1,630	215	1,440	1,600	1,120
10	5,450	5,310	1,430	5,780	10,000	6,310	1,230	1,540	1,070	1,650	1,100	1,380
11	4,730	5,020	1,620	2,860	10,500	7,520	1,160	1,530	642	1,210	1,310	1,400
12	5,060	5,020	1,690	4,470	10,600	7,850	948	1,440	* 2,760	985	1,470	1,240
13	6,300	5,060	1,880	5,700	10,800	7,980	627	1,620	* 3,960	808	1,820	1,100
14	6,020	5,070	1,960	5,800	10,800	7,940	535	2,530	5,410	581	1,930	1,220
15	6,100	5,010	2,140	5,550	10,500	7,880	728	4,050	3,970	605	1,920	1,370
16	6,190	4,330	2,110	5,500	9,320	7,910	807	4,190	1,220	1,000	1,610	1,420
17	6,220	4,080	2,090	5,270	8,970	8,130	775	4,820	465	1,210	1,240	1,800
18	6,450	4,140	2,170	5,160	8,450	8,460	824	4,520	234	1,210	1,180	3,970
19	6,720	4,290	2,280	5,040	8,420	8,920	1,050	4,270	220	1,310	1,450	5,220
20	6,750	3,670	2,860	5,000	8,350	8,950	816	3,840	2,850	1,370	1,430	5,310
21	6,630	3,450	2,970	4,980	8,910	9,060	713	3,350	2,490	1,530	1,410	5,070
22	7,050	2,740	2,970	5,130	9,240	8,880	580	3,240	846	1,930	1,470	4,790
23	7,210	2,380	3,100	5,530	9,180	8,640	580	3,100	450	2,060	1,450	4,720
24	6,870	2,200	3,120	5,930	7,510	8,240	669	5,210	274	2,040	1,400	4,740
25	6,630	2,000	3,130	6,200	6,540	8,430	684	4,950	189	1,950	1,500	5,050
26	6,180	2,250	3,540	6,290	6,050	7,720	661	4,750	261	1,800	1,510	5,490
27	6,230	2,530	3,870	6,390	6,850	7,440	976	4,620	288	1,700	2,120	5,520
28	6,350	2,520	3,870	6,180	6,890	7,120	1,320	4,570	303	1,680	2,290	5,360
29	6,610	3,840	5,980	6,370	6,740	1,700	4,660	384	2,060	2,100	4,300	
30	6,570	3,290	6,630	6,590	5,540	1,460	4,670	441	2,460	1,880	4,480	
31	6,540	5,180		5,840	1,460	4,740			2,510		4,790	
Sum	124,300	171,300	262,740	219,050	44,503	95,580	54,066	45,100	59,150	89,231		
175,880	79,320											

Month	Current Year 1955			Period						
	Extreme Gage Feet		High	Extreme Second-Feet		Average Second-Feet	Total Acre-Feet			
	High	Low		Day	Day					
Jan.	32.28	28.23	23	7,390	1	1,970	5,670	349,000		
Feb.	31.66	28.16	1	6,550	25	1,890	4,440	247,000		
Mar.	30.82	27.64	31	5,550	10	1,390	2,560	157,000		
Apr.	32.35	27.04	30	7,610	12	920	5,710	340,000		
May	34.63	30.39	13	11,100	31	5,010	8,480	521,000		
June	33.38	29.79	21	9,120	2	4,050	7,300	434,000		
July	30.43	26.48	1	5,060	14	510	1,440	88,300		
Aug.	31.28	27.37	31	6,230	1	1,220	3,080	190,000		
Sept.	32.52	26.10	2	7,890	+19	168	1,800	107,000		
Oct.	28.63	26.60	31	2,550	+14	557	1,450	89,500		
Nov.	29.73	26.99	3	4,190	18	916	1,970	117,000		
Dec.	31.69	26.35	28	6,490	2	326	2,880	177,000		
Yearly	34.63	26.10		11,100		168	3,890	2,816,800		

* Partly estimated † And other days

RIO GRANDE BELOW ANZALDUAS DAM SITE

DESCRIPTION: Water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located .5 mile below the headworks of the Anzalduas Canal and Anzalduas Dam site, 11.7 river miles above the international highway bridge between Hidalgo, Texas and Reynosa, Tamaulipas, 1,073.1 river miles below the American Dam at El Paso, Texas, and 168.3 river miles from the Gulf of Mexico. The zero of the gage is 82.61 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 117 meter measurements during the year, 111 by the Mexican and 6 by the United States Section of this Commission, and a continuous record of gage heights. Records for a station at Hidalgo Bridge, 11.7 river miles downstream, may be found in previous water bulletins. Computations by shifting channel methods. Records available: January 1, 1952 through December 31, 1955.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcón Dam, flow at this station, after August 25, 1953, was controlled largely by releases from Falcón Reservoir, 102.2 miles upstream, and especially by diversions into Anzalduas Canal, .5 mile upstream. When the Rio Grande flow at the Hidalgo-Reynosa international highway bridge exceeds about 60,000 second-feet, then a portion of the upstream river flow finds outlet to the Gulf of Mexico through flood channels which branch from the Rio Grande, in the United States, a short distance above this station and, in Mexico, within 118 miles below this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 27,900 second-feet on September 6, 1953, at a gage height of 21.85 feet. Min. periods of no flow have occurred on several occasions at a gage height of 1.08 feet.

Average Flow in Second-Feet †

Daily:	Max. 27,440	Sept. 6, 1953	Min. 0	Occasionally
Monthly:	Max. 7,880	Sept. 1953	Min. 25.1	June 1953
Yearly:	Max. 1,840	1953	Min. 1,180	1952

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,560	2,650	1,270	2,500	2,160	3,740	2,890	1,040	1,190	289	1,580	1,750
2	1,670	2,450	1,280	2,670	2,650	3,810	2,480	1,030	1,240	526	1,800	1,140
3	1,980	2,220	1,360	2,930	2,460	3,210	2,240	922	2,150	636	1,910	540
4	2,410	1,830	1,250	3,110	2,530	3,530	2,490	936	1,550	682	1,940	537
5	2,210	1,880	950	3,050	2,650	3,990	2,540	992	826	643	1,750	678
6	2,340	2,180	812	3,220	2,810	3,960	2,290	1,090	607	600	1,700	848
7	2,460	2,060	876	3,050	2,710	3,780	2,140	1,190	297	519	1,910	897
8	2,470	1,960	929	3,220	3,250	3,570	1,740	1,300	120	643	2,320	894
9	2,500	1,910	1,010	3,520	2,900	3,370	1,340	1,260	213	805	2,360	724
10	2,510	1,660	1,040	3,170	3,320	2,870	713	1,160	209	992	1,390	699
11	2,880	1,400	961	2,790	3,210	2,900	636	1,060	111	840	604	1,020
12	2,710	1,180	1,120	3,220	3,390	3,130	590	1,070	109	622	540	989
13	2,800	1,400	1,310	1,700	3,370	3,280	473	1,050	109	551	989	766
14	2,510	1,310	1,350	2,370	3,740	3,340	473	1,250	109	385	1,130	562
15	2,310	1,100	1,300	2,570	4,240	3,380	410	1,360	109	335	1,160	547
16	2,320	1,060	1,410	2,610	3,890	3,260	455	1,420	109	374	1,110	675
17	2,180	1,180	1,390	2,930	3,810	3,220	650	1,690	109	484	918	791
18	2,100	1,040	1,340	2,750	3,570	3,150	537	1,580	109	660	583	1,440
19	2,230	1,300	1,500	2,370	3,280	3,460	487	1,510	109	650	547	1,900
20	2,390	1,800	1,770	2,240	3,160	3,670	565	1,340	109	685	798	1,570
21	2,450	2,030	2,150	2,150	3,290	3,640	395	1,020	109	756	992	1,390
22	2,530	2,140	2,200	2,150	3,890	3,780	293	893	109	915	918	1,090
23	3,230	1,270	2,190	2,460	3,920	3,670	244	805	109	1,510	809	911
24	3,440	858	2,310	2,840	3,740	3,430	304	798	191	1,540	812	763
25	2,970	819	2,360	2,760	3,430	3,370	321	798	328	1,460	830	936
Sum	44,273	44,273	52,988	78,510	102,020	105,300	31,628	34,273	11,819	26,102	38,109	33,777
75,100												

Current Year 1955

Month	Extreme Gage Feet			Extreme Second-Feet			Average Second-Feet	Total Acre-Feet	Acre-Feet			
	Extreme Gage Feet		Day	Extreme Second-Feet		Day			Acre-Feet			
	High	Low		High	Low	Average	Average		Maximum	Minimum		
Jan.	6.89	4.20	24	3,480	1	1,530	2,420	149,000	73,870	149,000	31,800	
Feb.	5.91	2.69	1	2,790	26	653	1,580	87,820	66,218	114,100	23,290	
Mar.	6.76	2.72	28	3,380	6	738	1,710	105,100	79,335	108,500	51,200	
Apr.	6.76	2.66	9	3,740	12	717	2,620	155,700	82,372	155,700	28,310	
May	7.94	4.72	15	4,380	1	1,980	3,290	202,400	132,922	202,400	35,190	
June	7.55	5.64	5	4,240	10	2,700	3,510	208,900	138,770	214,900	1,480	
July	6.07	1.35	1	3,130	22	237	1,020	62,730	93,700	252,400	5,830	
Aug.	4.53	2.08	17	1,830	27	523	1,110	67,980	109,235	241,200	48,850	
Sept.	5.97	.79	4	3,080	†11	109	394	23,440	148,458	468,500	23,440	
Oct.	4.36	1.31	31	1,880	1	276	842	51,770	117,888	359,200	21,480	
Nov.	5.38	1.74	9	2,510	12	410	1,270	75,590	51,830	75,590	26,600	
Dec.	5.38	1.71	31	2,610	3	410	1,090	67,000	47,072	83,320	1,900	
Yearly	7.94	.79		4,380		109	1,740	1,257,430	1,141,670	1,330,780	856,680	

† And other days † Period 1952-1955

RIO GRANDE FLOODWAY DISCHARGES LOWER RIO GRANDE VALLEY

On the United States Side

During floods, water is diverted from the Rio Grande to the United States floodway system at the Mission Inlet and Hackney Lake Inlet to the Main Floodway. These inlets are located, respectively, approximately 6 miles above and 5 miles below the gaging station at Anzaldúa Dam site, 11.7 river miles above the international highway bridge between Hidalgo, Texas and Reynosa, Tamaulipas. Flood water entering the Mission Inlet is measured at the North Floodway Station south of McAllen and flood water entering the Hackney Lake Inlet is measured at the South Floodway Station south of McAllen. These waters join at a point about 5 miles northeast of Hidalgo and flow eastward in the Main Floodway for about 19 miles to a point approximately 3 miles southwest of Mercedes. Here, the floodway divides, one channel going northeastward through the Arroyo Colorado Floodway to the Gulf of Mexico and the other going to the Gulf via the North Floodway, traveling first northward and then eastward. The Arroyo Colorado Floodway is measured at U.S. 83 Highway bridge near Harlingen, and the North Floodway flow is measured at U.S. 77 Highway bridge near Sebastian.

In 1955, there was no flow from the Rio Grande through these floodways.

On the Mexican Side

There are several regular floodways on the Mexican side which divert excess Rio Grande floodwater to the Gulf of Mexico. During 1955, no flow was diverted from the Rio Grande into these floodways, including the Retamal Canal.

RIO GRANDE AT PROGRESO BRIDGE, TEXAS

DESCRIPTION: Water-stage recorder on the downstream side of the center pier of the bridge, 2 miles south of Progreso, Texas, .8 mile below Progreso pumping plant, 1,117.5 river miles below the American Dam at El Paso, Texas, and 123.9 river miles above the Gulf of Mexico. The zero of the gage is 52.56 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 63 meter measurements made during the year from the bridge, 54 by the Mexican and 9 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting channel methods. Records available: December 1, 1952 through August 24, 1953 and December 1, 1953 through December 31, 1955.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcon Dam, flow at this station, after August 25, 1953, was controlled largely by releases from Falcon Reservoir, 147 miles upstream. When the Rio Grande flow at the Hidalgo-Reynosa international highway bridge exceeds about 60,000 second-feet or more, then a portion of the upstream river flow finds outlet to the Gulf of Mexico through flood channels which branch from the Rio Grande in both countries within the reach, 44.4 miles upstream and 120.6 miles downstream from this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 10,810 second-feet on April 11, 1954, with a gage height of 14.50 feet. Min. no flow several days in June, July, and August 1953.

Average Flow in Second-Feet

Daily:	Max. * 9,960	April 11, 1954	Min. 0	Frequently 1953
Monthly:	Max. 2,620	June 1955	Min. 5.1	June 1953
Yearly:	Max. 1,270	1954, 1955	Min. 1,270	1955

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,250	1,740	872	1,970	1,530	2,860	2,320	759	529	148	1,040	1,460
2	1,290	1,840	791	1,780	1,710	2,490	2,020	597	702	186	950	1,560
3	1,400	1,710	855	2,040	1,880	2,280	1,870	548	791	313	1,120	1,130
4	1,440	1,510	1,010	2,410	1,770	2,140	2,030	378	1,600	364	1,370	621
5	1,610	1,310	911	2,300	1,760	2,380	2,130	382	1,470	403	1,360	487
6	1,550	1,550	671	2,210	1,820	2,800	1,910	516	932	360	1,310	456
7	1,660	1,810	692	2,270	1,900	2,770	1,730	752	759	305	1,420	424
8	1,920	1,550	534	2,250	2,120	2,710	1,650	982	388	165	1,510	487
9	2,020	1,440	548	2,540	2,540	2,460	1,550	880	151	201	2,090	530
10	2,120	1,330	569	2,830	2,160	2,410	1,450	880	99.2	544	2,060	441
11	2,070	1,220	590	2,730	2,180	2,090	961	731	180	742	1,340	427
12	2,270	1,160	512	2,130	2,150	2,210	749	629	200	692	572	724
13	1,980	1,090	685	1,050	2,460	2,490	636	594	178	477	225	671
14	2,080	1,250	1,070	1,260	2,500	2,440	452	699	152	367	681	438
15	2,120	939	887	1,670	2,840	2,420	431	961	144	185	685	304
16	2,020	692	763	1,840	3,410	2,430	385	922	167	114	667	247
17	1,960	597	802	2,070	3,100	2,320	417	759	171	170	685	321
18	1,670	636	812	2,410	2,920	2,260	597	1,070	148	166	575	494
19	1,610	523	752	2,030	2,760	2,500	512	1,060	189	177	441	1,040
20	1,670	869	1,000	1,640	2,490	2,980	364	1,130	196	187	321	1,180
21	1,750	1,530	1,470	1,530	2,330	2,940	337	1,110	188	190	611	1,020
22	1,740	1,900	1,450	1,460	2,540	2,880	284	897	179	223	551	893
23	2,090	1,730	510	1,520	3,040	2,900	216	703	165	346	466	678
24	2,870	953	1,490	1,900	3,010	2,850	160	512	141	901	385	583
25	2,870	699	1,540	2,120	2,750	2,650	161	371	148	879	597	618
26	2,420	717	1,680	1,980	2,420	2,750	132	375	218	738	448	703
27	1,850	689	2,200	1,920	1,740	3,390	84.4	218	234	632	536	982
28	1,530	1,170	2,830	1,910	1,630	3,160	120	249	185	540	865	1,090
29	1,620	2,750	1,810	2,430	2,900	120	809	164	463	928	1,020	
30	1,730	2,110	2,380	1,590	3,000	2,630	134	759	149	572	1,150	1,050
31	1,730	2,110	2,780				596	495		1,050		1,260
Sum		34,154		59,170		78,490		21,727		12,800		23,339
57,910		36,736		73,670		26,508.4		10,917.2		26,959		

Current Year 1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Acre-Feet			Period # Dec. 1952-1955
	High	Low	Day	High	Low			Average	Maximum	Minimum	
Jan.	7.64	4.17	24	3,030	1	1,230	1,870	114,900	82,873	114,900	20,800
Feb.	5.64	2.49	22	1,980	19	498	1,220	67,740	55,017	83,210	14,100
Mar.	7.02	2.43	28	2,890	12	470	1,190	72,870	60,130	77,520	30,000
Apr.	6.96	3.18	10	2,870	13	777	1,970	117,400	* 78,897	117,400	* 36,900
May	8.01	4.49	16	3,520	1	1,480	2,380	146,100	92,900	146,100	20,600
June	7.71	5.41	27	3,470	11	2,020	2,620	155,700	103,201	155,700	305
July	6.30	1.18	1	2,500	27	78.4	855	52,580	33,057	52,580	1,310
Aug.	4.07	1.74	20	1,190	27	184	701	43,16*	48,460	53,820	43,100
Sept.	5.48	1.15	4	1,840	10	91.8	364	21,650	34,900	48,150	21,650
Oct.	3.97	1.05	31	1,140	16	113	413	25,390	*, 040	48,690	25,390
Nov.	5.91	1.51	9	2,220	13	188	899	53,470	46,950	53,470	40,430
Dec.	4.79	1.71	2	1,610	16	244	753	46,290	48,650	65,900	20,000
Yearly	8.01	1.05		3,520		78.4	1,270	917,190	722,075	920,420	917,190

* Partly estimated # Some months missing

RIO GRANDE NEAR SAN BENITO, TEXAS

DESCRIPTION: Temporary water-stage recorder, operated during periods of low and medium flows, located on the United States side, 5.4 miles below San Benito pumping plant, 1,142.5 river miles below the American Dam at El Paso, Texas and 98.9 river miles above the Gulf of Mexico. The zero of the gage is at mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 31 measurements during the year, by wading during low flows, by boat during medium flows, and a continuous record of gage heights. Computations by shifting channel methods. Records available: November 26, 1952 through August 25, 1953 and December 1953 through December 1955.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcón Dam, flow at this station, after August 25, 1953, was controlled largely by releases from Falcon Reservoir, 172 miles upstream. When the Rio Grande flow at the Hidalgo-Reynosa international bridge exceeds about 60,000 second-feet or more, then a portion of the upstream river flow finds outlet to the Gulf of Mexico through flood channels, which branch from the Rio Grande in both countries within the reach, 69.4 miles upstream and 95.6 miles downstream from this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. " 8,040 second-feet on April 11, 1954. Min. no flow occurs frequently.

Average Flow in Second-Feet †

Daily:	Max. " 7,180	April 11, 1954	Min. 0	Frequently
Monthly:	Max. 1,040	June 1954	Min. 91.4	Oct. 1955
Yearly:	Max. 426	1954	Min. 341	1955

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	332	521	364	293	438	688	724	260	90.2	39.2	245	367
2	414	583	76.4	281	410	660	588	159	113	54.5	93.2	790
3	280	395	143	329	518	486	558	144	138	62.4	111	681
4	249	354	277	687	434	434	718	106	506	44.5	201	492
5	283	169	202	816	428	605	735	60.2	1,070	24.8	207	226
6	392	413	126	598	430	775	606	59.4	859	28.9	174	137
7	218	586	79.6	692	482	794	395	186	463	54.0	193	109
8	388	428	33.3	694	418	673	387	326	330	94.5	296	97.3
9	572	214	39.1	722	581	569	520	310	211	24.1	714	104
10	436	225	26.1	1,090	453	509	780	298	140	111	1,130	162
11	326	134	86.2	1,240	358	487	617	265	119	256	710	160
12	410	117	44.5	865	333	476	614	125	182	185	252	254
13	367	121	48.3	325	526	487	633	163	194	156	111	221
14	283	104	184	60.4	619	522	428	225	150	76.9	63.2	167
15	402	329	332	488	770	450	282	274	154	71.8	206	88.3
16	432	127	199	611	949	582	317	257	92.0	90.0	129	13.5
17	371	42.2	128	512	1,100	576	320	121	84.8	51.6	118	7.2
18	277	0	141	880	823	524	367	176	109	57.9	99.5	53.3
19	73.1	0	116	803	736	742	377	203	152	33.2	55.2	188
20	62.7	0	101	546	681	866	286	440	167	10.9	77.7	584
21	131	274	309	490	730	921	158	453	119	7.1	54.5	308
22	210	472	286	410	772	862	127	306	87.1	6.1	107	284
23	429	730	259	364	793	724	130	142	29.1	5.7	55.0	244
24	1,160	320	275	525	968	762	127	85.4	11.6	64.7	49.7	222
25	1,350	227	247	722	801	801	69.2	72.2	43.9	307	51.7	263
26	1,060	293	256	576	670	900	19.0	96.0	59.0	191	77.4	178
27	520	331	433	528	391	1,010	11.7	117	12.8	186	90.5	89.5
28	202	410	695	494	86.1	1,170	10.0	50.7	41.1	152	146	213
29	59.2	843	448	390	1,040	8.8	136	26.9	96.6	196	253	
30	463	583	471	788	797	7.1	336	51.4	125	249	259	
31	499	427	736			35.1	121		166			483
Sum	7,919.2	17,560.4	20,892	6,072.9	2,834.4							7,698.1
	12,651.0	7,359.5	18,612.1	10,954.9	5,805.9							6,262.6

Current Year 1955

Period # Dec. 1952-1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Low			Average	Maximum	Minimum
Jan.	38.81	33.69	25	1,400	29	43.3	408	25,100	19,920	28,400
Feb.	37.22	23		818	17	0	283	15,700	14,570	21,500
Mar.	37.63	33.35	29	931	10	10.6	237	14,600	14,133	15,800
Apr.	38.67	33.65	11	1,350	14	35.3	585	34,800	31,433	45,400
May	38.05	" 33.25	17	1,140	28	0	600	36,900	25,390	36,900
June	38.22	35.56	28	1,180	4	415	696	41,400	34,518	62,100
July	37.26	33.19	10	840	31	6.5	353	21,700	14,045	21,700
Aug.	36.27	33.29	21	560	28	12.0	196	12,000	14,300	16,600
Sept.	38.15	33.11	5	1,210	27	9.6	194	11,500	13,250	15,000
Oct.	35.38	32.95	25	368	23	5.0	91.4	5,620	16,810	28,000
Nov.	38.14	33.30	10	1,220	25	27.5	209	12,400	9,070	12,400
Dec.	36.75	32.97	2	830	17	6.4	248	15,300	16,662	28,300
Yearly	38.81			1,400	0	341	247,020	224,101	308,540	247,020

" Estimated † And other days * Some months missing ‡ Period 1954-1955

RIO GRANDE AT LOWER BROWNSVILLE, TEXAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located 1,000 feet below the El Jardín pumping plant, 6.6 river miles below Brownsville, Texas and Matamoros, Tamaulipas, 50.4 river miles upstream from the Gulf of Mexico, and 1,191.0 river miles below the American Dam at El Paso, Texas. The zero of the gage is at mean sea level, U.S.C. & G.S. datum. An auxiliary water-stage recorder, located 300 feet downstream from this station, was used during periods of low flow.

RECORDS: Based on 29 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: January 1934 through December 1955.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcón Dam, flow at this station, after August 25, 1953, was controlled largely by releases from Falcón Reservoir, 220 miles upstream. During floods, when flow at the Hidalgo-Reynosa international highway bridge exceeds approximately 60,000 second-feet, a portion of the upstream river flow finds outlet to the Gulf of Mexico through flood channels in both countries within 124.6 miles above this station.

EXTREME FLOWS FROM RECORDS: The greatest recorded flow since January 1934 was 31,700 second-feet, which occurred October 8, 1945, with a gage height of 31.48 feet. Zero flow occurs frequently.

Average Flow in Second-Feet

Daily:	Max.	30,800	Sept. 14, 1942; Oct. 8, 1945	Min.	0	Frequently
Monthly:	Max.	* 23,200	Oct. 1941	Min.	0	June & July 1953
Yearly:	Max.	9,010	1941	Min.	116	1955

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	16.5	375	178	61.7	46.7	146	294	20.2	34.2	30.3	22.9	94.1
2	30.2	358	238	19.0	62.4	63.8	238	15.0	29.3	33.7	26.6	110
3	77.1	330	69.2	1.4	35.3	68.5	202	30.9	61.8	44.5	31.8	356
4	62.6	221	8.4	.5	50.6	7.4	153	44.3	72.9	41.1	10.3	449
5	20.4	143	59.3	54.8	25.2	0	239	47.6	361	40.9	0	353
6	.8	187	67.2	176	.4	24.7	346	56.3	982	26.5	6.1	198
7	45.1	184	34.3	123	2.1	195	259	38.0	962	25.0	1.7	64.6
8	38.7	310	6.4	132	0	249	149	37.4	554	21.6	8.7	50.8
9	27.3	274	4.4	210	0	168	334	160	403	16.5	51.5	28.5
10	144	86.6	6.1	260	.1	102	513	177	269	57.0	214	3.8
11	98.5	38.0	3.6	553	21.7	21.3	719	129	214	39.6	561	39.6
12	53.1	51.9	13.6	779	.6	24.3	682	132	183	40.2	446	103
13	54.0	47.6	16.2	551	0	11.8	526	70.9	64.5	281	28.8	
14	103	14.4	7.8	167	.1	6.8	521	63.0	216	47.0	140	15.2
15	56.9	7.0	4.8	* 10.0	63.8	.5	437	106	196	51.8	42.0	2.2
16	70.6	25.0	48.9	7.4	192	0	284	126	178	42.9	37.9	3.9
17	84.2	31.1	28.9	110	325	3.1	225	152	155	43.6	110	8.5
18	81.4	5.5	0	82.8	392	3.7	251	79.6	121	35.9	102	.6
19	67.0	6.9	.6	231	217	.1	283	37.2	116	19.5	55.8	.1
20	14.6	9.5	2.3	281	155	76.5	258	114	150	18.4	41.2	0
21	0	13.2	.6	117	98.6	176	230	219	138	23.3	25.8	95.8
22	1.9	16.2	3.8	63.1	135	272	209	440	118	20.5	4.4	40.4
23	14.4	47.4	41.0	23.7	205	219	140	302	124	18.3	0	4.4
24	36.9	241	7.2	7.9	226	127	114	93.9	94.8	15.4	0	16.6
25	462	179	5.3	72.4	337	149	77.0	65.4	68.3	13.4	0	21.2
26	713	55.6	5.1	174	266	200	37.7	34.1	48.1	29.1	0	39.0
27	561	37.1	6.9	122	120	305	34.8	15.3	54.1	30.3	.2	11.2
28	223	46.4	28.0	67.6	22.3	401	3.3	20.2	53.4	4.1	.4	.5
29	54.6	180	69.1	.1	535	10.7	49.7	34.0	14.7	0	0	
30	7.1	360	42.0	3.2	433	21.7	25.7	32.2	13.7	48.3	0	
31	40.8	195		132		20.2	150		28.6			.5
Sum	3,341.4	4,569.4	3,135.2	3,989.5	7,811.4	3,051.7	6,199.1	951.9	2,139.3			
	3,260.7	1,630.9							2,269.6			

Current Year 1955

Period 1934-1955

Month	Extreme Gage Feet		Extreme Second-Feet		Average Second-Feet	Total	Acre-Feet		
	High	Low	Day	Day			High	Maximum	Minimum
Jan.	11.19		26	742	† 6	0	105	6,470	121,270
Feb.	9.42		1	413	† 14	0	119	6,630	90,167
Mar.	9.50		30	372	† 9	0	52.6	3,230	81,226
Apr.	11.34		12	877	† 4	0	152	9,060	76,724
May	9.74		18	431	† 5	0	101	6,220	203,749
June	10.35		29	558	† 5	0	133	7,910	248,641
July	11.20		11	782	28	.9	252	15,500	* 1,161,000
Aug.	9.64	6.48	22	468	2	5.6	98.4	6,050	181,624
Sept.	12.31	6.64	7	1,110	2	12.7	207	12,300	679,000
Oct.	7.79		13	118	28	0	30.7	1,890	* 378,496
Nov.	10.50		11	606	† 4	0	75.7	4,500	138,992
Dec.	9.89		4	470	† 10	0	69.0	4,240	107,777
Yearly	12.31			1,110		0	116	84,000	* 6,526,000
									84,000

^{*} Estimated * Partly estimated † And other days

OUTFALLS FROM WELLS AND SEWERS INTO THE RIO GRANDE
In Acre-Feet

EL PASO ELECTRIC COMPANY SANTA FE STREET PLANT COOLING WATER WASTE

This outfall enters the Rio Grande 3.3 miles below the American Dam. The 1955 record of outfall was obtained from records of water pumped from the company's wells and use of such water by the City of El Paso.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1955	6.4	1.0	0	0	0	0	0	0	0	0	0	.6	8.0
* Average	46.3	43.1	61.7	41.2	75.2	78.3	70.7	56.8	39.5	42.3	30.6	35.4	621.1

EL PASO SEWAGE OUTFALL

This sewage outfall enters the Rio Grande 6.6 river miles below the American Dam. The 1955 record of outfall consists of flows measured by a Parshall meter and estimates by the Department of Water and Sewerage of the City of El Paso of amounts which by-passed the meter, minus estimated diversions between the Sewage Plant and the Rio Grande for irrigation use on 50 acres of land.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1955	1,145	1,028	1,132	1,085	1,192	1,235	1,330	1,324	1,245	1,240	1,129	1,155	14,240
# Average	789	739	799	776	838	888	956	944	893	902	840	828	10,192

EL PASO COUNTY WATER CONTROL AND IMPROVEMENT DISTRICT NO. 1 SEWAGE OUTFALLS

This water enters the Rio Grande through the sewer system of the El Paso County Water Control and Improvement District No. 1 between Ascarate and Ysleta, Texas, 9 and 15 miles, respectively, below the American Dam. The tabulation includes the outfalls from Disposal Plant No. 1 at Ascarate, Texas and Disposal Plant No. 2, a few miles downstream. Records furnished by the El Paso County Water Control and Improvement District No. 1.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1955	114.0	103.0	114.0	110.0	114.0	110.0	114.0	114.0	110.0	114.0	110.0	114.0	1,341.0
# Average	65.6	60.1	56.3	51.4	46.7	46.6	51.7	54.2	56.1	64.6	66.6	66.9	686.8

LAREDO SEWAGE OUTFALL

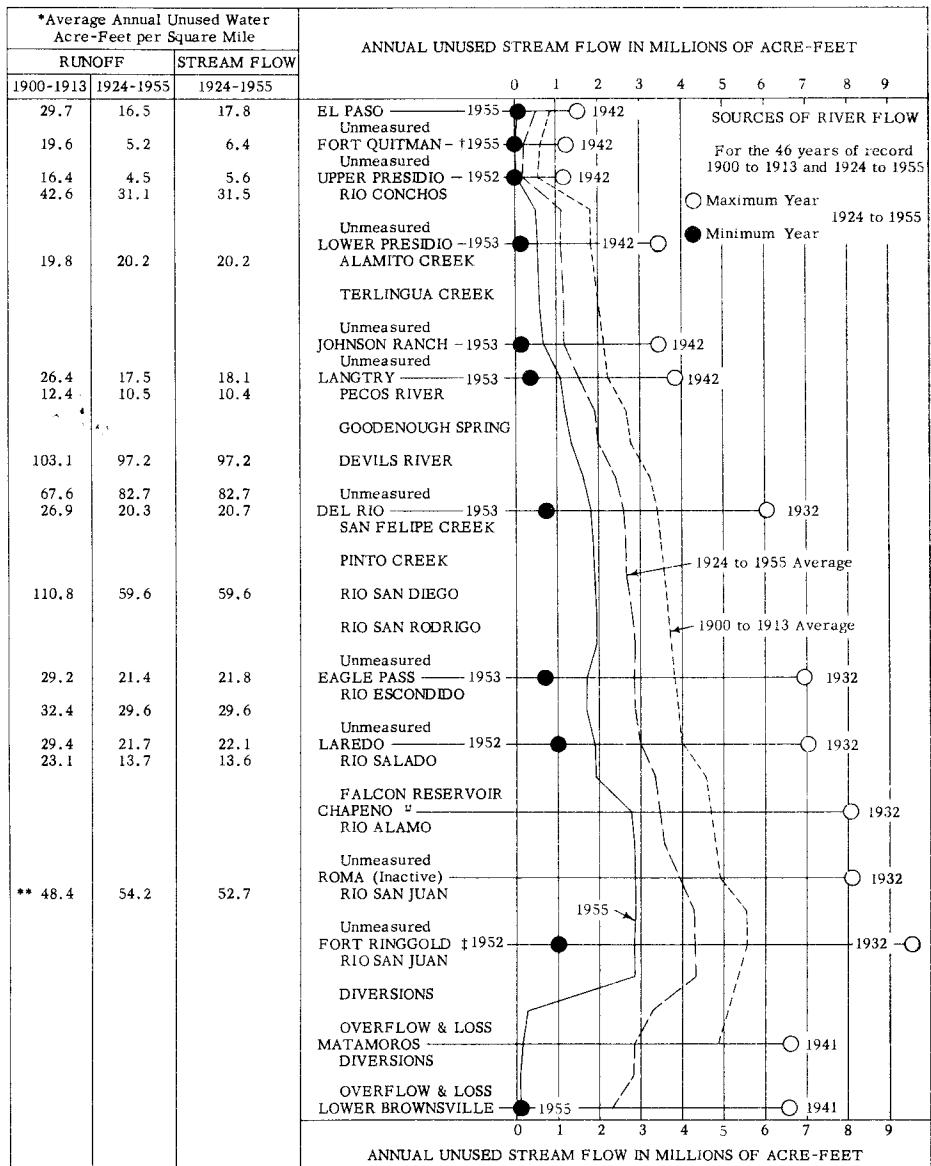
This sewage outfall enters the Rio Grande 885.7 river miles below the American Dam at El Paso, Texas and 0.1 river miles above the Laredo Gaging station. The record is based on estimates by the Texas State Health Department.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1955	232	243	340	338	325	313	303	265	211	255	255	256	3,336
# Average	175	180	212	210	214	191	197	196	173	172	183	180	2,283

* Period 1940-1955, some years missing Ø Period 1936-1955 # Period 1950-1955

SOURCES OF RIVER FLOW

The graph and the column of figures on this page represent data on the annual yield of drainage areas tributary to various stream-gaging stations in the Rio Grande watershed. The graphic values are for the entire tributary area, while the column figures are reduced to the yield from one average square mile of the tributary area. There were no reservoirs of consequence on the area from 1900 to 1913; therefore, the figures in the first column correspond to those for that period in the graph. Because more than 10,000,000 acre-feet of reservoir capacity have been developed on the watershed since 1913, in which large volumes of unused runoff are stored in some years and released in later years as unused stream flow (thus reducing the unused stream flow in some years and adding thereto in others), it is significant to differentiate between the unused runoff and the unused stream flow.

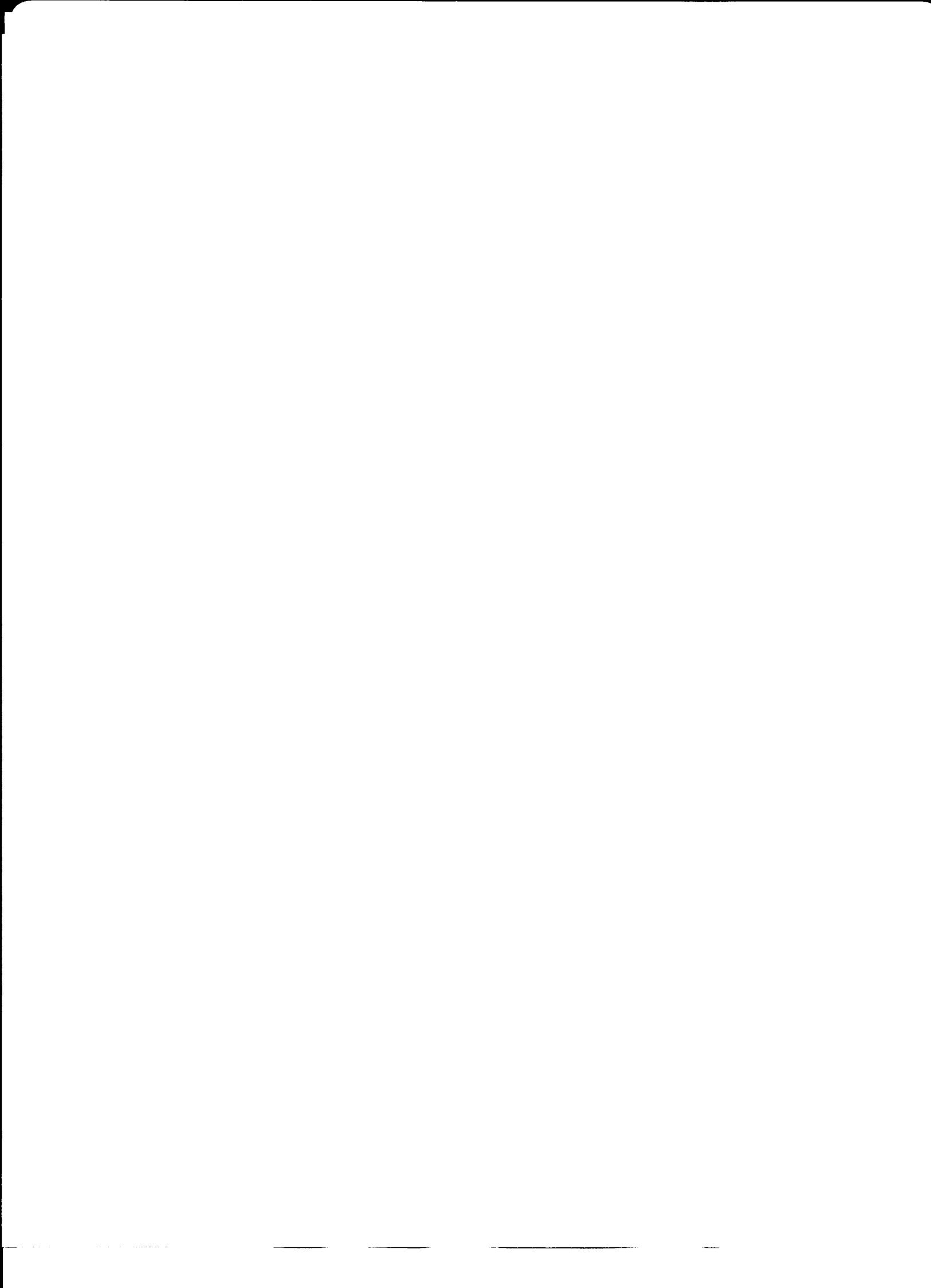


* Adjusted to re-defined watershed areas in Mexico. ** Includes contributions of the Río San Juan entering the Rio Grande above and below Rio Grande City. " Values prior to 1953 are considered to be the same as Zapata gaging station.
† Values prior to 1955 are considered to be the same as Rio Grande City gaging station. † Also 1952.

RIO GRANDE DRAINAGE BASIN

INTERNATIONAL BOUNDARY & WATER COMMISSION
UNITED STATES & MEXICO

SAN MARCIAL, NEW MEXICO
TO THE GULF OF MEXICO



STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN
In Thousands of Acre-Feet

Data are presented below for all storage reservoirs in the Rio Grande Basin, in the United States and Mexico, that exceed 15,000 acre-feet in capacity, and also for International Falcón Reservoir on the Rio Grande. The monthly figures represent the water in storage on the last day of each month, in thousands of acre-feet. The capacities indicated are at spillway level. Storage figures greater than the capacity indicate that the water surface was above spillway level.

The reservoirs and the sources of the data are: Rio Grande, Continental, Santa María, Terrace, and Mountain Home from the Colorado State Engineer; Sanchez from the Sanchez Ditch and Reservoir Company; Costilla from the New Mexico Interstate Stream Commission; El Vado from the Middle Rio Grande Conservancy District; Elephant Butte, Caballo, Alamogordo, McMillan, and Avalon from the United States Bureau of Reclamation; Red Bluff from the Red Bluff Water Power Control District; Willacy from the Willacy County Water Control and Improvement District No. 1; Boquilla, Colina, and Rosetilla from the Rio Conchos Agriculture and the Electric Power Company of Mexico; Francisco I. Madero, Centenario and San Miguel, Venustiano Carranza, Marte Gómez, Culebrón, Villa Cárdenas, and Palito Blanco from the Ministry of Hydraulic Resources of Mexico; International Falcón Reservoir from the International Boundary and Water Commission.

In the United States

Month	RIO GRANDE (Capacity 51.1)		CONTINENTAL (Capacity 26.7)		SANTA MARIA (Capacity 43.6)		TERRACE (Capacity 17.7)		MOUNTAIN HOME (Capacity 20.1)		SANCHEZ (Capacity 103.2)	
	1955	#Average 1927-1955	1955	#Average 1928-1955	1955	#Average 1928-1955	1955	#Average 1925-1955	1955	#Average 1924-1955	1955	#Average 1927-1955
Jan.	5.1	13.3	2.9	5.2	2.3	7.5	.9	2.6	1.5	3.9	3.5	10.3
Feb.	6.2	14.5	3.5	5.5	2.8	8.1	1.0	2.9	1.5	4.2	3.8	10.5
Mar.	7.5	15.8	4.1	5.7	3.2	9.1	1.3	3.4	2.4	4.6	4.4	11.2
Apr.	7.8	15.4	4.1	6.2	3.4	10.6	1.4	4.0	2.5	5.3	5.8	13.0
May	7.8	22.6	4.1	8.3	3.4	15.3	1.6	6.9	4.8	7.6	10.4	18.2
June	1.9	23.9	3.1	8.8	3.4	17.6	1.0	8.5	10.0	7.7	13.3	17.5
July	0	14.2	0	6.5	2.1	12.0	.9	5.4	7.5	5.4	9.3	12.1
Aug.	0	6.2	0	4.5	1.4	5.6	.9	2.8	6.6	3.4	12.6	8.9
Sept.	0	6.0	0	4.6	1.4	5.2	.9	2.3	5.2	3.0	12.5	9.0
Oct.	0	7.1	0	4.3	1.4	5.5	.8	2.4	5.2	3.0	12.8	9.7
Nov.	1.4	10.1	.3	4.5	1.7	6.2	.5	2.1	5.8	3.4	13.1	9.8
Dec.	2.7	11.6	.8	4.9	2.0	6.7	.8	2.4	6.2	3.7	13.4	10.2
Avg.	3.4	13.4	1.9	5.8	2.4	9.1	1.0	3.8	4.9	4.6	9.6	11.7
Max.	7.8	51.8	4.1	26.7	3.4	42.1	1.6	17.7	10.0	16.4	13.4	62.4
Min.	0	0	0	0	1.4	0	.5	0	1.5	0	3.5	0

Month	COSTILLA (Capacity 15.7)		EL VADO (Capacity 200.3)		BLUEWATER (Capacity 43.5)		ELEPHANT BUTTE (Capacity 2,185.4)		CABALLO (Capacity 346.0)	
	1955	#Average 1922-1955	1955	Average 1935-1955	1955	#Average 1927-1955	1955	Average 1915-1955	1955	#Average 1938-1955
Jan.	^v 2.6	4.1	0	51.5			125.1	902.5	18.9	157.5
Feb.	^v 3.0	4.4	0	45.9			150.3	903.8	19.6	173.8
Mar.	^v 3.6	5.0	.5	42.8			141.1	891.1	14.3	156.4
Apr.	^v 4.5	6.1	1.0	93.1			121.1	892.0	8.2	130.0
May	6.1	8.6	42.0	148.1	1955 Data		131.9	1,013.1	7.0	120.4
June	7.7	7.9	45.5	135.8	Not Available		97.6	1,060.7	13.0	98.5
July	5.2	5.0	32.7	108.7			73.0	1,004.0	29.8	72.0
Aug.	4.4	3.3	20.8	79.3			120.8	938.0	21.2	37.6
Sept.	4.0	2.8	0	62.6			112.3	899.2	5.4	30.7
Oct.	^v 4.2	3.1	0	57.2			122.8	891.2	6.9	55.6
Nov.	^v 4.4	3.4	.3	50.9			130.4	890.9	7.8	82.8
Dec.	^v 4.7	3.8	.3	49.1			155.0	896.4	9.1	111.2
Avg.	4.5	4.8	11.9	77.1			123.4	931.9	13.4	102.2
Max.	7.7	15.1	45.5	203.5			ø 160.8	ø 2,302.8	ø 29.8	ø 346.6
Min.	^v 2.6	0	0	0			ø 62.2	ø 3.3	ø 3.8	ø .1

^v Estimated # Some months missing ø Daily extreme

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN
In Thousands of Acre-Feet

In the United States

Month	ALAMOGORDO (Capacity 122.0)		McMILLAN and AVALON (Capacity 43.5)		RED BLUFF (Capacity 310.0)		WILLACY (Capacity 25.0)		TOTAL IN U.S. RESERVOIRS ** (Capacity 3,510.3)	
	1955	#Average 1937-1955	1955	#Average 1908-1955	1955	#Average 1936-1955	1955	#Average 1939-1955	1955	Estimated Average
Jan.	80.2	60.1	37.5	28.4	164.0	116.6	15.0	13.5	459.5	1,377.0
Feb.	82.6	64.1	35.4	28.6	162.0	119.7	17.7	12.7	489.4	1,398.7
Mar.	82.6	55.5	31.0	26.7	141.6	116.5	15.3	12.2	452.9	1,356.0
Apr.	80.9	43.6	14.4	18.5	115.4	97.0	16.8	11.2	387.3	1,346.0
May	82.1	54.0	11.9	21.7	102.7	105.2	16.2	12.1	432.0	1,562.1
June	52.7	46.9	9.6	20.7	81.0	111.7	12.8	12.7	352.6	1,578.9
July	69.1	50.4	30.5	18.4	53.0	96.9	16.6	13.0	329.7	1,424.0
Aug.	97.9	51.0	12.6	16.3	27.0	82.4	14.2	12.0	340.4	1,251.3
Sept.	66.3	48.8	39.5	18.8	31.7	84.8	16.8	14.4	296.0	1,192.2
Oct.	73.6	53.9	42.3	21.9	94.4	100.4	12.6	14.6	377.0	1,229.9
Nov.	73.7	53.4	42.6	23.4	96.5	104.6	15.0	13.6	393.5	1,259.1
Dec.	80.7	57.9	43.6	27.1	99.7	110.2	12.6	14.2	431.6	1,309.4
Avg.	76.9	53.3	29.2	22.5	97.4	103.8	15.1	13.0	395.2	1,357.0
Max.	97.9	156.3	43.6	85.5	164.0	327.5	17.7	22.0	489.4	
Min.	52.7	.4	9.6	0	27.0	10.0	12.6	0	296.0	

In Mexico

Month	BO BOQUILLA (Capacity 2,417.5)		LA COLINA (Capacity 19.5)		ROSETILLA (Capacity 15.4)		MADERO (Capacity 344.6)		CENTENARIO and SAN MIGUEL (Capacity 19.9)	
	1955	#Average 1914-1955	1955	Average 1940-1955	1955	Average 1940-1955	1955	#Average 1948-1955	1955	Average 1934-1955
Jan.	797.5	1,383.7	19.1	17.9	11.8	13.6	247.5	159.5	16.1	12.3
Feb.	790.7	1,353.5	18.9	18.1	12.6	14.6	247.5	160.3	12.8	11.8
Mar.	774.1	1,305.0	18.0	17.7	11.6	14.0	246.5	156.6	10.5	8.6
Apr.	719.4	1,240.3	18.2	18.3	11.9	13.2	206.0	136.9	6.6	7.1
May	658.7	1,185.8	18.0	18.4	11.1	11.4	176.1	120.1	2.8	8.3
June	600.7	1,104.2	18.5	18.2	11.1	12.8	149.7	102.1	4.1	7.8
July	634.4	1,146.8	17.8	18.3	13.9	12.9	171.2	122.0	4.0	7.6
Aug.	1,016.2	1,312.9	18.2	18.0	13.3	12.8	261.4	141.6	3.9	8.2
Sept.	1,279.6	1,460.3	16.7	18.1	12.1	14.0	294.4	169.3	6.9	10.4
Oct.	1,458.1	1,457.9	18.9	18.0	14.1	14.1	342.9	183.0	10.9	12.4
Nov.	1,450.0	1,421.8	15.2	17.6	12.5	13.4	341.8	182.7	12.4	11.9
Dec.	1,422.0	1,404.2	18.1	17.5	14.5	14.4	341.3	182.0	9.6	11.8
Avg.	966.8	1,314.7	18.0	18.0	12.5	13.4	251.4	151.3	8.4	9.8
Max.	1,458.1	2,224.5	19.1	20.4	14.5	19.4	342.9	342.9	16.1	20.7
Min.	600.7	16.9	15.2	13.5	11.1	.4	140.7	1.4	2.8	0

Month	VENUSTIANO CARRANZA (Capacity 1,123.0)		MARTE GOMEZ (Capacity 1,016.1)		CULEBRON and VILLA CARDENAS (Capacity 90.0)		PALITO BLANCO (Capacity 124.0)		TOTAL IN MEXICAN RESERVOIRS (Capacity 5,170.0)	
	1955	Average 1930-1955	1955	#Average 1943-1955	1955	#Average 1939-1955	1955	Average 1942-1955	1955	Estimated Average
Jan.	33.0	363.5	553.7	520.4	43.0	43.5	33.2	39.4	1,754.9	2,553.8
Feb.	26.4	347.5	498.6	465.0	22.2	37.2	37.9	30.1	1,667.6	2,438.1
Mar.	13.3	327.1	482.4	407.2	14.3	31.1	30.6	31.2	1,601.3	2,298.5
Apr.	6.8	316.1	376.2	389.6	25.9	30.7	14.8	25.0	1,385.8	2,177.2
May	9.2	305.4	290.2	372.4	22.1	34.6	31.9	19.5	1,220.1	2,075.9
June	3.4	297.7	158.6	338.0	14.9	45.1	16.0	21.8	968.0	1,947.7
July	9.6	289.2	185.1	317.0	20.7	41.9	14.8	30.3	1,071.5	1,986.0
Aug.	22.9	292.7	234.3	426.2	64.2	43.8	33.6	31.6	1,668.0	2,297.8
Sept.	76.0	340.3	548.0	518.2	71.3	56.1	94.3	48.1	2,399.3	2,634.8
Oct.	80.0	359.9	638.0	565.9	64.4	62.3	83.8	61.7	2,711.1	2,735.2
Nov.	76.9	368.6	651.0	560.8	53.8	52.8	59.9	56.4	2,679.3	2,689.5
Dec.	71.6	369.1	644.5	560.7	77.1	52.1	92.2	56.4	2,690.9	2,668.2
Avg.	35.8	331.4	438.4	453.4	41.2	44.3	45.7	37.9	1,818.2	2,374.4
Max.	80.0	1,163.4	651.0	991.5	77.1	116.8	94.3	140.1		
Min.	3.4	* 1.0	158.6	† 17.8	14.3	0	14.8	0		

* Some months missing. ** Excludes Bluewater Reservoir. In May, 1952, a new and lower outlet was installed, thereby increasing the average storage 402,900 acre-feet. In November 1955, the crest of the spillway was raised, increasing the storage capacity from 876,400 acre-feet to 1,016,100 acre-feet. * Minimum since full reservoir in 1932. † Minimum since full reservoir in 1947.

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN
International Falcón Reservoir

Falcón Dam is the lowermost of the major international storage dams authorized for construction on the Rio Grande by the Water Treaty of 1944 between the United States and Mexico and was the first dam constructed. It is located 86 river miles downstream from Laredo, Texas and Nuevo Laredo, Tamaulipas, 105 river miles upstream from Hidalgo, Texas and Reynosa, Tamaulipas, 970.9 river miles below the American Dam, and 270.5 river miles above the Gulf of Mexico.

Falcón Dam and Reservoir serve to control and regulate floods and other flows of the Rio Grande for domestic and irrigation uses downstream in the two countries, and serve incidental purposes, including the generation of hydroelectric energy at two identical power plants, one on each side of the river immediately below the dam. In the course of construction of Falcón Dam, the flow of the Rio Grande was diverted through the temporary outlets on December 29, 1952. These outlets were closed and permanent storage began on August 25, 1953, although some small storage occurred prior to that time when the flow of the river exceeded the capacity of the temporary outlets.

The stored water belonging to each country is based on their respective river and tributary flows, consumptive uses, and losses, as specified in the Water Treaty.

Storage Capacities

Elevation	Description	At Indicated Elevation		Between Indicated Elevations	
		Reservoir Capacity Acre-Feet	Reservoir Area Acres	Storage Volume Acre-Feet	Type of Storage
175.0	River Bed at Dam Axis	0	0		
204.34	Lowest Outlet (Mexican Penstock)	16,455	1,449	16,455	Silt and Dead
296.4	Top of Conservation Storage	2,440,528	78,451	2,424,073	Silt and Conservation
306.7	Top of Spillway Gates	3,349,287	98,805	908,759	Ordinary Flood
314.2	Maximum Water Surface	4,150,971	115,581	801,684	Super Flood

During the winter months, 400,000 acre-feet of the flood control capacity may be utilized for additional conservation storage.

Water Surface Elevations and Stored Water

Water-Surface Elevations in Feet Above Mean Sea Level, U.S.C. & G.S. Datum

Storage in Thousands of Acre-Feet

Month	LAST DAY OF MONTH AT MIDNIGHT	MONTHLY							
		AVERAGE	MAXIMUM			MINIMUM			
Elevation	Storage	Elevation	Storage	Day	Elevation	Storage	Day		
Dec. *	295.20	2,347.6							
Jan.	291.26	2,059.8	2,216.4	295.20	2,347.6	1	291.26	2,059.8	31
Feb.	288.66	1,884.0	1,950.6	291.26	2,059.8	1	288.66	1,884.0	28
Mar.	286.53	1,748.0	1,832.1	288.66	1,884.0	1	286.53	1,748.0	31
Apr.	280.84	1,418.6	1,581.6	286.53	1,748.0	1	280.84	1,418.6	30
May	272.65	1,024.2	1,199.3	280.84	1,418.6	1	272.65	1,024.2	31
June	263.11	668.5	856.9	272.65	1,024.2	1	263.11	668.5	30
July	265.40	744.9	677.0	265.40	744.9	31	262.46	647.8	18
Aug.	269.53	896.7	826.3	269.53	896.7	31	265.40	744.9	1
Sept.	281.25	1,440.7	1,186.7	281.25	1,440.7	30	269.53	896.7	1
Oct.	283.67	1,576.3	1,541.0	283.81	1,584.4	†28	281.25	1,440.7	30
Nov.	283.62	1,573.4	1,573.9	283.77	1,582.7	23	283.48	1,565.3	6
Dec.	281.74	1,467.5	1,548.4	283.71	1,578.6	† 5	281.74	1,467.5	31
Yearly		1,412.7	295.20	2,347.6			262.46	647.8	

* December 1954 † And other days

**DIVERSIONS FROM THE RIO GRANDE
AMERICAN CANAL AT EL PASO, TEXAS**

DESCRIPTION: An open channel rating station in a concrete-lined canal with a water-stage recorder located 2,350 feet below the head gates at the American Dam near El Paso, Texas. Measurements are made at the downstream end of the first covered section of this canal, 835 feet below the recorder. The zero of the gage is 3,712.09 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 15 meter measurements during the year, a stable rating curve at medium and high flows, and a continuous record of gage heights. After May 7, 1954, computations for flows below gage height 2.80 feet (discharge approximately 30 second-feet) are based on auxiliary recorder, 400 feet below head gates. Records available: June 2, 1938 through December 1955.

REMARKS: This canal diverts water from the Rio Grande at the American Dam near El Paso, Texas, 2.1 river miles above the International Dam near Juárez, Chihuahua. Water from this canal discharges into the Franklin Canal from which water is frequently returned to the Rio Grande at spillways 2.2, 2.7, and 3.6 river miles below the American Dam.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,840 second-feet on March 27, 1944. Min. frequently no flow.

Average Flow in Second-Feet

Daily:	Max. 1,510	Avg. 1,345	Min. 0	Frequently
Monthly:	Max. 1,210	Avg. 1943	Min. 0	Frequently since 1952
Yearly:	Max. 748	Avg. 1943	Min. 73.1	1955

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	312	" 3.0	0	230	31.6	210	26.6	20.9	0
2	0	0	0	278	" 3.0	0	270	24.3	233	28.4	20.9	0
3	0	0	0	185	58.0	" 2.0	251	20.3	260	28.6	21.4	0
4	0	0	0	161	151	" 3.0	234	20.3	220	22.7	21.4	0
5	0	0	0	160	156	" 3.0	122	67.3	234	38.5	* 12.8	0
6	0	0	0	150	212	" 3.0	140	161	221	40.3	" 3.0	0
7	0	0	0	75.2	210	" 3.0	140	210	230	19.9	" 3.0	0
8	0	0	0	63.3	162	" 3.0	147	282	361	19.0	" 1.1	0
9	0	0	0	64.7	32.8	" 2.0	143	235	502	22.2	0	0
10	0	0	0	55.5	8.6	6.5	141	224	583	25.2	0	0
11	0	0	0	43.2	" 3.0	92.6	172	146	688	24.2	0	0
12	0	0	0	86.9	" 3.0	362	309	85.9	639	22.7	0	0
13	0	0	0	104	" 3.0	336	202	121	530	21.8	0	0
14	0	0	0	47.4	" 3.0	340	209	31.5	391	22.2	0	0
15	0	0	0	46.0	" 3.0	352	57.9	20.7	82.5	23.1	0	0
16	0	0	0	105	" 3.0	329	21.5	22.6	37.8	23.0	0	0
17	0	0	0	141	" 3.0	261	20.2	22.0	23.0	23.5	0	0
18	0	0	0	200	" 3.0	162	77.7	25.3	21.2	22.1	0	0
19	0	0	0	91.3	" 1.0	103	153	143	17.3	22.6	0	0
20	0	0	0	58.2	" 2.0	89.7	147	306	19.2	22.1	0	0
21	0	0	0	* 9.2	" 2.0	61.0	344	280	22.1	22.1	0	0
22	0	0	" .2	110	" 2.0	64.7	202	337	22.5	22.1	0	0
23	0	0	45.8	150	" 2.0	74.3	213	365	23.6	22.6	0	0
24	0	0	149	139	" 2.0	74.3	393	348	24.1	22.1	0	0
25	0	0	117	48.6	" 2.5	70.4	371	354	22.5	21.2	0	0
26	0	0	186	10.2	" 3.0	68.3	251	324	* 17.3	17.0	0	0
27	0	0	316	4.0	" 3.0	29.5	84.0	325	* 19.3	16.5	0	0
28	0	0	340	" 3.0	" 2.5	19.4	28.2	272	23.1	17.7	0	0
29	0	0	361	" 3.0	" 2.0	2.0	19.0	223	23.8	21.9	0	0
30	0	0	370	" 3.0	" 2.0	88.3	78.0	211	25.5	21.5	0	0
31	0	0	338			1.0	28.5	213		21.8		0
Sum	0	0	2,223.0	2,907.7		3,022.0	5,403.0	5,480.8	5,726.8	725.2	104.5	0

Current Year 1955

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total	Period June 1938-1955			
	High	Low	Day	Day	Low			Acre-Feet	Average	Maximum	
					High	Low					
Jan.				0		0	0	0	1,563	8,110	
Feb.				0		0	0	0	7,703	19,500	
Mar.	6.12	30	395	† 1	0	71.7	4,410	30,642	50,100	4,410	
Apr.	5.67	1	326	† 21	" 3.0	96.9	5,770	45,363	70,900	5,770	
May	5.50	6	302	† 19	0	33.8	2,080	37,843	69,000	2,080	
June	6.02	12	379	† 1	0	101	5,990	44,511	65,700	5,990	
July	9.04	20	1,060	20	0	174	10,700	51,288	70,700	10,700	
Aug.	7.50	21	660	15	13.0	177	10,900	51,806	74,600	8,620	
Sept.	7.81	11	731	20	15.7	191	11,400	35,185	63,100	2,230	
Oct.	3.92	5	106	† 27	15.4	23.4	1,440	17,334	39,100	1,440	
Nov.		2	22.7	† 8	0	3.5	207	9,928	21,000	207	
Dec.			0		0	0	0	10,373	25,500	0	
Yearly	9.04		1,060			0	73.1	52,897	343,539	541,610	52,897

^{*} Estimated * Partly estimated † And other days

DIVERSIONS FROM THE RIO GRANDE
ACEQUIA MADRE NEAR JUAREZ, CHIHUAHUA

DESCRIPTION: Water-stage recorder and bridge for meter measurements, located about 260 feet below the canal intake at the International Dam at Juárez, Chihuahua, which is 2.1 river miles below the American Dam at El Paso, Texas.

RECORDS: Based on 36 meter measurements during the year, 23 by the Mexican and 13 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting channel methods. Records available: 1938 through December 1955. These records, showing the water actually diverted by Mexico, do not necessarily reflect the quantities of water made available to Mexico in the bed of the river by the United States under terms of the Convention of 1906. Such quantities of water are included in the record of "Rio Grande Below American Dam", page 8 herein.

REMARKS: In 1955, all of the 8,185 acre-feet tabulated below were distributed to land irrigated in the first unit under the canal.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 480 second-feet on July 21, 1944, with a gage height of 6.00 feet. Min. no flow through the winter months.

Average Flow in Second-Feet

Daily:	Max. 339	May 10, 1942	Min. 0	Several months each year
Monthly:	Max. 283	May 1938	Min. 0	Several months each year
Yearly:	Max. 116	1942	Min. 11.3	1955

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	0	125	0	0	0
2	0	0	0	0	0	0	0	0	114	0	0	0
3	0	0	0	0	0	0	0	0	111	0	0	0
4	0	0	0	0	0	0	0	0	110	0	0	0
5	0	0	0	0	0	0	0	0	110	0	0	0
6	0	0	0	0	0	0	0	0	109	0	0	0
7	0	0	0	0	0	0	0	0	108	0	0	0
8	0	0	0	0	0	0	0	0	106	0	0	0
9	0	0	0	0	0	0	0	0	105	0	0	0
10	0	0	0	98.9	0	0	0	0	75.2	0	0	0
11	0	0	0	222	0	0	0	0	67.8	0	0	0
12	0	0	0	198	0	0	0	0	33.9	0	0	0
13	0	0	0	161	0	0	0	0	0	0	0	0
14	0	0	0	155	0	0	0	0	0	0	0	0
15	0	0	0	170	0	0	0	0	0	0	0	0
16	0	0	0	171	0	0	0	0	0	0	0	0
17	0	0	0	161	0	0	0	0	0	0	0	0
18	0	0	0	163	0	0	0	0	0	0	0	0
19	0	0	0	174	0	0	0	0	0	0	0	0
20	0	0	0	165	0	0	44.8	0	0	0	0	0
21	0	0	0	165	0	0	50.5	0	0	0	0	0
22	0	0	0	81.9	0	0	75.6	0	0	0	0	0
23	0	0	0	0	0	0	87.6	0	0	0	0	0
24	0	0	0	0	0	0	86.9	0	0	0	0	0
25	0	0	0	0	0	0	86.2	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	59.0	0	0	0
29	0	0	0	0	0	0	0	0	122	0	0	0
30	0	0	0	0	0	0	0	0	130	0	0	0
31	0	0	0	0	0	0	0	0	122	0	0	0
Sum	0	0	0	2,085.8	0	0	431.6	433.0	1,174.9	0	0	0

Month	Average Rainfall Inches **	Current Year 1955						Period 1938-1955			
		Extreme Second-Feet		Average Second- Feet	Total Acre-Feet	Acre-Feet			Acre-Feet		
		High	Low			Average	Maximum	Minimum	Average	Maximum	Minimum
1938-1955	1955	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day
Jan.	.41	.26	0	0	0	0	0	0	0	0	0
Feb.	.24	.01	0	0	0	0	0	0	0	0	0
Mar.	.25	.03	0	0	0	0	0	0	1,315	5,540	0
Apr.	.21	0	11	246	† 1	69.5	4,140	6,284	11,720	2,030	
May	.45	.15	0	0	0	0	0	0	11,301	17,380	0
June	.72	.11	0	0	0	0	0	9,002	15,700	0	
July	1.62	3.46	23	Ø 87.6	† 1	0	13.9	856	9,011	15,170	856
Aug.	1.35	1.32	30	128	† 1	0	14.0	859	8,831	12,410	77.0
Sept.	.94	.51	1	Ø 125	† 13	0	39.2	2,330	6,463	12,380	0
Oct.	.83	1.26	0	0	0	0	0	0	85.8	328	0
Nov.	.24	.08	0	0	0	0	0	0	0	0	0
Dec.	.49	.02	0	0	0	0	0	0	0	0	0
Yearly	7.75	7.21		246		0	11.3	8,185	52,292.8	83,930	8,185

* And other days Ø Mean daily ** Average for valley floor from El Paso to Island Station.

DIVERSIONS FROM THE RIO GRANDE
MAVERICK CANAL AT MILE 13
NEAR QUEMADO, TEXAS

DESCRIPTION: For power generation and irrigation use, water is diverted into the main Maverick Canal from the Rio Grande at a point 17.4 river miles below the international bridge between Del Rio, Texas and Cd. Acuña, Coahuila and 711.0 river miles below the American Dam at El Paso, Texas. At a point 31.8 canal miles below the headworks of this canal, a portion of the diverted water returns to the river through the Maverick Power Plant and the remainder enters the Maverick Canal Extension. The discharges shown below are based on records of stage and measurements of discharge at a point approximately 13 canal miles below the diversion point. Gage heights at this station are often affected by gate operation at Las Moras Siphon, 2.4 miles downstream.

RECORDS: Based on 22 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: June 21, 1949 through December 1955.

REMARKS: In 1955, a total of 37,332 acres of land was irrigated from this canal and its extension. Of this total, 475 acres were above this gaging station, 9,414 acres were between this station and the Canal Extension, and 27,443 acres were irrigated from the Maverick Canal Extension. A total of 438,800 acre-feet of water returned to the Rio Grande at the power plant and some returned through the irrigation system.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,650 second-feet on May 27, 1952. Min. no flow several days in June, July, and November 1954.

Average Flow in Second-Feet

Daily:	Max.	1,620	July 13, 1952	Min.	0	June 28 through July 11 & Nov. 2, 1954
Monthly:	Max.	* 1,530	July	Min. "	319	July 1954
Yearly:	Max.	1,390	1950	Min.	935	1953

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,220	1,170	1,100	1,030	940	801	918	1,230	* 1,170	973	1,080	* 1,090
2	1,190	1,170	1,080	998	902	783	1,140	1,230	* 1,170	1,030	1,060	* 1,080
3	1,210	1,110	1,080	932	1,200	814	1,080	1,250	* 1,180	1,070	1,060	* 1,080
4	1,220	1,200	1,050	* 982	1,270	1,200	1,020	1,260	* 1,180	1,070	1,070	* 1,060
5	1,210	1,210	1,050	* 952	* 1,330	945	982	1,230	* 1,180	1,060	1,090	* 1,060
6	1,180	1,210	1,040	* 909	* 1,260	1,040	934	1,230	* 1,170	1,040	1,100	* 1,090
7	1,160	1,230	1,050	* 913	* 1,180	1,320	918	1,260	* 1,140	1,070	1,080	* 1,090
8	1,150	1,230	1,080	870	* 1,230	1,280	1,070	1,220	* 1,140	1,110	1,110	1,090
9	1,200	1,210	1,070	859	* 1,280	1,200	1,040	1,240	* 1,100	1,120	1,120	1,090
10	1,190	1,190	1,090	887	* 1,220	1,120	998	1,220	1,080	1,150	1,130	1,090
11	1,180	1,170	1,120	876	822	1,080	972	1,200	1,090	1,160	1,140	1,080
12	1,190	1,130	1,080	875	* 768	1,050	952	1,240	1,080	1,170	1,120	1,090
13	1,170	1,150	1,050	833	* 852	1,050	926	1,150	1,070	1,150	1,120	1,090
14	1,180	1,140	1,060	823	* 1,080	989	893	1,170	1,060	1,170	1,130	1,080
15	1,190	1,140	1,050	* 782	* 1,230	962	873	1,150	1,050	1,180	1,140	1,080
16	1,230	1,140	1,050	775	* 1,210	996	908	1,090	1,000	1,190	1,130	1,070
17	1,230	1,120	1,040	795	* 1,260	1,100	1,000	1,120	967	1,190	1,150	1,070
18	1,260	1,110	1,000	791	* 1,210	1,070	983	1,140	949	1,180	1,150	1,090
19	1,220	1,090	994	839	* 1,310	1,200	1,100	1,170	1,100	1,170	* 1,140	1,080
20	1,190	1,100	1,010	865	* 1,150	1,060	939	1,160	991	1,160	* 1,140	1,080
21	1,200	1,100	1,020	871	979	1,160	1,230	* 1,160	1,130	1,140	* 1,130	1,090
22	1,150	1,090	951	845	940	1,210	1,260	* 1,160	1,100	1,130	* 1,120	1,080
23	1,200	1,100	980	859	1,010	1,130	1,320	* 1,160	1,110	1,110	* 1,120	1,070
24	1,210	1,100	962	861	965	1,270	1,280	* 1,160	1,130	1,090	* 1,110	1,090
25	1,200	1,120	1,020	863	947	1,260	1,220	* 1,150	1,050	1,090	* 1,120	* 1,080
26	1,200	1,090	1,030	863	957	1,160	1,240	* 1,180	1,030	1,080	* 1,120	" 1,080
27	1,190	1,130	1,020	* 939	904	1,030	1,260	* 1,180	1,020	1,080	* 1,120	" 1,080
28	1,200	1,120	966	* 913	875	967	1,200	* 1,170	1,000	1,060	* 1,110	" 1,090
29	1,150		1,050	* 868	881	964	1,260	* 1,160	1,060	1,070	* 1,120	" 1,080
30	1,160		999	* 851	840	939	1,210	* 1,170	1,020	1,080	* 1,140	" 1,080
31	1,170		998		819		1,270	* 1,170	1,090			" 1,080
Sum	32,070		* 32,140	* 26,319		32,150		* 36,780	34,433		* 33,530	
	37,000			* 32,821		33,396		* 32,517	* 33,470			

Current Year 1955 Period July 1949-1955 **

Month	Extreme Gage Feet			Extreme Second-Feet		Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Low			Average	Maximum	Minimum
Jan.	4.21	3.30	18	1,310	8	1,070	1,190	73,400	78,533	89,500
Feb.	4.05	3.15	4	1,280	22	1,030	1,150	63,600	65,167	82,500
Mar.	3.95	2.72	11	1,180	30	830	1,040	63,700	69,150	90,700
Apr.	3.65	2.33	1	1,140	16	732	877	52,200	61,883	81,000
May	4.11	2.06	4	1,360	2	692	1,070	65,100	68,017	82,200
June	4.07	1.95	†21	1,350	20	806	1,080	66,200	68,143	93,900
July	4.14	3.03	† 1	1,300	13	1,040	* 1,190	* 73,000	* 74,357	88,500
Aug.			† 3	† 9*	1,180	18	949	* 1,080	* 64,500	* 73,243
Sept.					1,200	1	953	1,110	68,300	* 84,500
Oct.	3.76	2.67	†16	1,170	2	1,030	* 1,120	* 66,400	* 69,843	87,500
Nov.	3.63	3.13	18	1,170	4	1,090	* 1,060	* 66,500	71,986	82,800
Dec.			† 1	g	1,360	692	* 1,090	* 786,700	839,460	1,004,200
Yearly										676,900

^a Estimated * Partly estimated † And other days ^b Mean daily ** Records from July 1949 to March 1952 are for Maverick Canal at Las Moras Creek Station, April through July 1952 from Maverick Canal at Mile 3 Station and from August 1952 through 1955 from Maverick Canal at Mile 13 Station.

**DIVERSIONS FROM THE RIO GRANDE
MAVERICK CANAL EXTENSION BELOW THE POWER PLANT
NEAR EAGLE PASS, TEXAS**

DESCRIPTION: The main Maverick Canal divides into two branches at a point about 31.8 canal miles below the point at which water from the Rio Grande is diverted. One branch leads to the Maverick Power Plant and back to the Rio Grande. The other branch forms this Maverick Canal Extension, which is used to transmit irrigation water. The water-stage recorder is located at a wood pile bridge about 1 mile below the heading of this canal extension. Meter measurements are made from the bridge.

RECORDS: Based on 20 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: 1939 through December 1955.

REMARKS: Irrigation from this canal extension began in June 1938. In 1955, 27,443 acres of land north and south of Eagle Pass were irrigated. Some water from this canal extension returns to the river through the irrigation system which extends approximately 67 canal miles downstream.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 505 second-feet on June 5, 1955. Min. occasionally no flow.

Average Flow in Second-Feet

Daily:	Max. 494	June 24, 1955	Min. 0	Occasionally
Monthly:	Max. 448	July 1955	Min. " 18.7	March 1939
Yearly:	Max. 321	1952	Min. 62.1	1939

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	310	299	324	368	373	412	360	302	" 220	250	309	229
2	306	302	322	364	376	408	332	303	" 210	253	308	227
3	309	295	342	365	393	424	291	302	" 210	255	307	227
4	308	294	376	372	393	447	301	301	" 260	258	307	227
5	311	295	379	374	387	430	324	300	" 270	276	310	226
6	297	295	379	369	381	449	316	298	" 260	277	312	225
7	305	294	336	369	374	455	329	301	" 250	277	312	225
8	304	295	342	379	377	447	397	298	" 250	279	280	226
9	306	294	376	374	379	442	392	296	" 250	280	* 238	226
10	311	291	376	401	*	350	431	348	296	252	284	* 213
11	310	291	380	399	" 304	431	347	364	254	283	207	225
12	310	291	373	387	" 297	445	348	330	253	282	203	225
13	306	292	374	369	" 271	443	347	303	250	284	203	225
14	307	292	376	368	" 251	432	351	212	250	288	203	225
15	311	292	376	368	" 244	434	354	155	250	288	201	226
16	309	294	372	369	" 240	443	355	252	249	288	201	225
17	313	297	376	370	*	251	467	*	303	261	290	202
18	313	297	377	365	241	470	*	256	259	249	291	201
19	312	297	373	365	252	487	*	258	257	254	293	200
20	310	299	379	373	247	481	*	264	256	256	295	200
21	309	300	378	374	269	489	*	273	257	257	293	208
22	305	303	378	374	282	485	268	256	253	292	228	271
23	310	304	385	375	285	483	266	251	254	293	228	272
24	310	306	382	376	315	494	259	" 240	253	292	231	272
25	305	327	376	380	337	490	260	" 240	252	290	265	273
26	306	345	349	374	344	481	258	*	260	253	289	275
27	305	350	317	379	353	475	258	" 240	253	288	274	273
28	301	344	336	372	387	470	273	" 230	252	287	273	273
29	299		376	366	411	360	299	" 240	257	285	275	273
30	302		369	367	407	328	306	" 240	250	292	254	273
31	299		368	411			307	" 250		309		273
Sum	8,475		11,205		13,433		8,350		8,781		7,582	
	9,519		11,322		10,182		9,600		* 7,476		7,428	

Month	Average Rainfall Inches **			Current Year 1955			Period 1939-1955		
	Extreme Second-Feet			Average Second- Feet	Total Acre-Feet	Acre-Feet			
	High 1939-1955	Low 1955	Day			Day	Average	Maximum	Minimum
Jan.	.95	.79	5	322	6	274	307	18,900	11,383
Feb.	.97	1.10	27	356	6	284	303	16,800	10,381
Mar.	.78	.14	23	398	8	286	365	22,500	12,036
Apr.	1.42	.11	11	404	9	310	374	22,200	11,831
May	3.16	1.57	29	427	16	Ø" 240	328	20,200	10,326
June	1.85	1.21	5	505	29	295	448	26,600	11,082
July	1.32	3.81	8	406	24	226	310	19,000	12,263
Aug.	2.58	5.46	11	374	† 14	0	269	16,600	11,338
Sept.	2.42	1.98	6	323	2	Ø" 210	*	14,800	20,300
Oct.	1.48	.47	31	316	1	246	283	17,400	12,024
Nov.	.64	1.07	6	320	† 14	198	248	14,700	12,044
Dec.	.66	.40	29	280	6	215	245	15,000	12,559
Yearly	18.23	18.11		493		0	310	224,700	137,533
							*	233,300	44,950

^{*} Estimated * Partly estimated † And other days Ø Mean daily ** On U.S. side from Quemado to Cuervo Creek.

**DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE BELOW FORT RINGGOLD
RIO GRANDE CITY, TEXAS**

The total diversion of 1,581,400 acre-feet to this area was made almost entirely by pumping from the river to irrigate 671,768 acres. Diversions were actually measured for approximately 92% of the acreage. Diversions to the remainder were estimated on an acreage and water-duty basis. Measurements in general were made by Venturi meters, by open channel rating stations, and deflection meters developed by this Commission. There is some re-use of drainage water within the area. Drainage water which escapes from the area does not return to the Rio Grande. In addition to the irrigated area, there were 26,778 acres of land cultivated within the area. More than one crop per year is often grown on some of the land.

Average Flow in Second-Feet

Daily @:	Max. 5,400	June 15, 1951	Min. 0	Sept. 25, 1949; Oct. 25, 1951
Monthly:	Max. 4,110	June 1955	Min. 25.2	June 1930
Yearly:	Max. 2,180	1955	Min. 653	1941

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1	1,760	2,780	2,220	3,810	2,520	4,580	3,690	1,380	1,690	415	2,610	1,240	
2	1,780	2,970	2,100	3,460	3,040	4,490	3,190	1,440	1,580	287	2,600	1,580	
3	2,630	2,970	1,710	2,720	3,300	4,540	2,420	1,700	1,220	830	2,260	1,480	
4	2,680	2,910	1,890	3,300	3,560	3,950	2,320	1,480	1,190	1,060	2,430	701	
5	2,740	2,130	1,900	3,630	3,550	3,380	3,330	1,330	630	1,120	2,490	1,200	
6	3,060	1,500	1,130	3,940	3,480	4,210	3,290	912	433	1,180	1,890	1,250	
7	3,020	2,580	1,630	3,770	3,350	4,420	3,030	656	617	1,120	2,510	1,240	
8	2,920	2,710	1,360	3,760	2,920	4,470	2,260	1,540	649	900	1,910	1,260	
9	2,640	2,740	1,330	3,140	4,110	4,430	1,300	1,610	480	487	1,580	1,360	
10	3,490	2,610	1,460	2,600	4,160	4,240	829	1,680	350	875	1,950	1,130	
11	3,270	2,200	1,480	3,560	4,220	3,710	579	1,920	200	1,010	2,550	641	
12	3,590	1,880	1,350	3,430	4,070	3,490	353	1,820	187	1,430	1,660	1,380	
13	3,250	1,570	1,050	2,920	3,810	4,280	495	1,340	211	1,490	724	1,730	
14	2,890	2,140	1,700	2,710	3,830	4,220	640	829	219	1,290	1,490	1,650	
15	2,520	2,220	1,820	2,790	3,830	4,200	566	1,840	211	780	1,790	1,450	
16	2,640	2,210	2,160	2,940	4,520	3,920	451	2,300	385	554	1,730	1,280	
17	3,580	2,130	2,070	2,690	4,370	4,180	329	2,060	272	1,020	1,540	1,040	
18	3,450	1,910	2,080	3,520	4,440	3,800	712	2,330	51.0	1,110	1,380	753	
19	3,360	1,600	1,800	3,480	4,370	2,980	904	2,070	93.0	1,130	1,060	1,770	
20	3,170	1,180	1,540	3,370	4,130	4,230	1,060	1,480	162	1,200	604	2,040	
21	3,250	1,390	2,430	3,190	3,730	4,380	1,070	1,110	241	1,190	1,390	2,320	
22	2,990	2,080	2,730	3,080	3,660	4,410	924	1,750	448	1,150	1,840	2,150	
23	2,160	3,110	2,860	2,690	4,370	4,570	682	1,590	379	825	1,800	1,630	
24	2,440	2,280	2,990	2,740	4,730	4,380	305	1,550	322	1,820	1,210	908	
25	3,470	1,360	3,070	3,450	4,660	3,960	993	1,290	148	2,060	1,640	568	
26	3,940	1,240	2,340	3,650	4,540	3,430	1,050	1,210	502	2,260	1,520	1,350	
27	3,720	896	2,100	3,570	4,340	4,260	841	1,100	648	2,120	996	1,890	
28	3,420	2,050	3,240	3,570	3,020	4,070	760	500	561	2,010	1,830	1,980	
29	2,870			3,850	3,180	3,040	4,190	874	1,320	533	1,660	1,930	1,810
30	2,310			3,940	2,930	4,200	4,030	761	1,880	481	1,170	1,600	1,870
31	2,870			3,890		4,620		911	1,820		2,160		1,580
Sum	59,346	97,590	123,400		46,837			37,713		44,231			
	91,880	67,220	120,490		40,919			15,043.0		52,514			

Month	Current Year 1955					Period 1922-1955					
	Average Rainfall Inches **		Extreme Second-Feet		Total Acre-Feet	Acre-Feet					
	High 1922-1955	Low 1955	High Day	Low Day		Average	Maximum	Minimum			
Jan.	1.34	.92	26	3,940	1	1,760	2,960	182,000	54,182	182,000	7,700
Feb.	.97	.46	23	3,110	27	896	2,120	118,000	66,453	158,000	6,960
Mar.	1.10	.08	30	3,940	13	1,050	2,170	133,000	87,165	156,000	14,100
Apr.	1.32	.21	6	3,940	10	2,600	3,250	194,000	78,051	194,000	29,300
May	3.18	.83	24	4,630	1	2,520	3,850	239,000	78,512	239,000	4,510
June	2.60	.09	23	4,570	19	2,980	4,070	245,000	82,585	245,000	1,500
July	1.81	3.27	1	3,690	24	305	1,320	81,200	75,858	161,000	10,000
Aug.	2.25	2.91	18	2,330	28	500	1,510	92,900	81,075	157,000	19,100
Sept.	4.52	8.00	1	1,690	18	51.0	501	29,800	61,797	156,000	8,020
Oct.	2.36	1.91	26	2,260	2	287	1,220	74,800	63,323	131,000	21,400
Nov.	1.21	.97	1	2,610	20	604	1,750	104,000	64,974	128,000	11,500
Dec.	1.49	.24	21	2,320	25	568	1,430	87,700	53,803	124,000	10,400
Yearly	24.15	19.89		4,630		51.0	2,180	1,581,400	847,778	1,581,400	472,500

* Mean daily @ Period 1938-1955 ** Lower Rio Grande Valley area on United States side from Rio Grande City to the Gulf of Mexico.

DIVERSIONS FROM THE RIO GRANDE
ANZALDUAS CANAL NEAR REYNOSA, TAMAULIPAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car, located .5 mile below the canal intake. The zero of the gage is 86.32 feet above mean sea level, U.S.C. & G.S. datum. This canal diverts water from the Rio Grande at a point 12.2 river miles above the international bridge between Hidalgo, Texas and Reynosa, Tamaulipas, 1,072.6 river miles below the American Dam at El Paso, Texas, and 168.8 river miles upstream from the Gulf of Mexico.

RECORDS: Based on 141 meter measurements during the year, 135 by the Mexican and 6 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting channel methods. Records available: 1952 through December 1955.

REMARKS: Diversions from the Rio Grande into this canal began May 26, 1952. The recorder began operating on December 31, 1953. Diversion by this canal is for irrigation and domestic use in Mexico and for conveying water for storage in Culebrón, Villa Cárdenas, and Palito Blanco reservoirs, about 23 canal miles below this station. In 1955, 416,223 acres were irrigated with water delivered through this canal. No water was returned to the Rio Grande through the Poniente Drain during 1955. Flow at this canal station is affected by backwater from the operation of canal gates 4.5, 11.3, and 22.5 miles below this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 7,560 second-feet on September 5, 1953, with a gage height of 15.58 feet. Zero flow occurred frequently with a gage height of zero foot.

Average Flow in Second-Feet ‡

Daily:	Max. 6,320	May 14, 1955	Min. 0	Frequently
Monthly:	Max. 4,200	May 1955	Min. 0	Several months
Yearly:	Max. 1,600	1955	Min. 150	1952

Mean Daily Discharge in Second-Feet 1955 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	10.6	3,030	572	1,740	3,990	1,240	2,150	58.6	4,100	10.2	182	10.2
2	10.6	3,150	565	1,930	4,270	1,110	1,770	60.4	5,440	208	176	10.2
3	10.6	3,240	516	2,190	4,380	1,070	540	61.8	5,790	1,450	162	10.2
4	238	3,430	558	2,230	4,170	1,070	3.5	63.9	5,510	901	509	10.2
5	2,040	3,270	498	2,240	4,270	1,060	3.5	60.0	1,980	211	593	10.2
6	2,180	3,190	632	2,160	4,310	1,010	3.5	60.0	904	119	491	10.2
7	1,330	3,200	551	2,240	4,380	1,120	3.5	60.7	1,190	10.2	441	10.2
8	1,410	3,210	551	2,140	4,660	1,980	3.5	54.0	533	10.3	410	10.2
9	1,730	3,060	438	2,310	5,230	2,500	456	50.5	230	10.3	477	10.2
10	1,890	3,190	56.9	2,560	5,330	2,480	1,090	46.3	350	113	459	10.2
11	1,520	3,180	3.5	2,230	5,760	2,670	812	45.2	833	487	303	10.2
12	1,400	3,170	3.5	1,110	6,070	3,490	915	42.7	829	279	378	10.2
13	2,000	3,190	3.5	1,840	6,290	3,530	629	42.4	2,840	149	374	10.2
14	3,050	3,160	3.5	2,160	6,320	3,570	80.5	43.4	4,380	81.6	208	10.2
15	3,510	3,170	3.5	2,130	5,800	3,600	80.2	650	5,010	10.3	179	10.2
16	3,400	2,960	3.5	2,100	5,510	3,600	3.5	1,830	3,380	10.3	171	10.2
17	3,260	2,350	3.5	2,030	4,270	3,640	28.3	1,980	882	10.3	167	10.2
18	3,150	2,390	3.5	1,890	4,270	3,990	60.0	2,490	536	10.3	181	10.2
19	3,160	2,220	3.5	1,900	4,270	4,240	65.0	2,440	384	37.8	182	1,500
20	3,270	1,900	3.5	1,900	4,270	4,240	175	2,400	285	44.1	178	2,910
21	3,310	1,210	3.5	1,850	4,270	4,240	239	2,240	2,500	35.0	10.2	3,120
22	3,210	943	3.5	1,830	4,130	4,240	257	2,030	2,120	29.3	10.2	3,200
23	3,140	1,030	3.5	1,720	4,270	4,240	79.1	1,920	727	25.1	10.2	3,300
24	3,230	1,030	3.5	1,980	4,100	4,200	33.2	2,310	292	27.5	10.2	3,670
25	3,260	1,060	3.5	2,310	3,050	4,100	38.5	3,640	9.9	10.3	10.2	3,710
26	3,370	982	3.5	2,620	2,940	3,530	31.8	3,920	9.9	10.3	10.2	3,530
27	3,340	505	3.5	2,730	2,820	2,970	40.6	3,570	9.9	10.3	10.2	3,330
28	2,930	727	3.5	2,810	2,470	2,790	42.4	2,910	9.9	10.3	10.2	3,290
29	3,130		3.5	2,970	1,900	2,730	45.9	2,820	9.9	10.3	10.2	2,760
30	3,520		3.5	3,290	1,470	2,710	42.4	2,950	9.9	10.3	10.2	1,710
31	3,370		172		1,410		87.9	2,830		128		1,830

Sum	67,147	65,140	86,960
74,379.8	5,179.9	130,710	9,809.8

43,679.9	51,084.4	4,469.4	38,043.6
6,323.0			

Month	Current Year 1955			Period 1952-1955		
	Extreme Second-Feet		Total	Acre-Feet		
	High	Low		Acre-Feet	Average	Maximum
1952-1955	1955	Day	Day			
Jan.	.49	1.28	25	3,670	† 1	10.6
Feb.	.50	.71	4	3,530	27	250
Mar.	.31	.19	6	699	†11	3.5
Apr.	1.35	.21	30	3,810	†12	639
May	1.13	.18	14	6,460	30	1,070
June	1.99	.20	19	4,270	6	876
July	1.82	2.80	1	2,400	† 4	3.5
Aug.	2.41	3.30	26	4,130	15	21.2
Sept.	3.48	6.19	3	5,930	†25	9.9
Oct.	3.05	1.51	3	1,870	† 1	10.2
Nov.	1.05	.61	4	925	†21	10.2
Dec.	.31	.06	24	4,030	† 1	10.2
Yearly	17.89	17.24		6,460	3.5	1,600
					1,156,240	594,266
					1,156,240	109,282

* Partly estimated † And other days ** Average of several stations † Period 1952-1955

MUNICIPAL WATER USES
In Acre-Feet

Tabulated below are yearly and monthly amounts of water pumped from the Rio Grande, or tributaries, into the municipal distribution systems of several cities along the border. The basic data are furnished by the municipalities. During May-October 1955, the City of El Paso pumped water from wells near Canutillo, Texas into the Rio Grande, about 17 miles upstream from the point of diversion at the water plant. This water, minus transportation losses from Canutillo to El Paso, estimated by the Bureau of Reclamation, amounted to 3,647 acre-feet and is included in the figures below. The Del Rio water came from San Felipe Springs. All other diversions are from the Rio Grande. Because of changing conditions, the period records are limited here to the past ten years.

The population figures for Mexico are estimates furnished by the respective municipalities. Population figures for United States cities are estimates made by the Chamber of Commerce in each city, except for Falcón Village, which was estimated by the International Boundary and Water Commission.

Records of Rio Grande water used by the City of Brownsville, as well as other municipalities in the Lower Rio Grande Valley on the United States side, are omitted because these amounts are included in the figures shown under "Diversions from the Rio Grande - United States Side Below Fort Ringgold, Rio Grande City, Texas" on Page 59 herein. The municipal water supply of Reynosa, Tamaulipas, Mexico is from the Rio Grande and from the Rhode Canal of the Marte R. Gómez Reservoir. Only the amounts diverted from the Rio Grande are shown below.

In the United States

Month	EL PASO			1955	DEL RIO			(Pop. 23,000) Ø		
	Period 1946-1955				1955	Period 1946-1955				
	Average	Maximum	Minimum			Average	Maximum			
Jan.	0	350.7	963.2	0	237.8	163.0	237.8	88.0		
Feb.	0	373.6	843.0	0	253.8	171.8	283.9	90.0		
Mar.	0	399.0	1,016.2	0	372.3	227.5	372.3	140.0		
Apr.	307	504.6	1,016.5	28.5	440.2	247.1	440.2	135.0		
May	285	636.4	1,103.7	43.0	428.1	282.8	428.1	199.1		
June	872	897.7	1,277	519.9	498.1	335.7	531.6	200.0		
July	1,011	920.1	1,187	728.0	518.6	371.8	606.5	220.0		
Aug.	1,123	919.2	1,139.0	540.4	465.6	365.4	518.2	207.9		
Sept.	1,092	805.4	1,158.0	207.7	409.7	293.0	487.5	210.0		
Oct.	983	684.0	983	205.0	377.4	220.7	377.4	110.0		
Nov.	140	426.5	842.7	0	254.8	189.8	254.8	90.0		
Dec.	0	478.7	952.8	0	236.9	176.0	266.1	89.0		
Yearly	5,813	7,395.9	11,384.6	4,049.5	4,493.3	3,044.6	4,493.3	1,811.0		

Month	EAGLE PASS			1955	LAREDO			(Pop. 62,000)		
	Period 1946-1955				1955	Period 1946-1955				
	Average	Maximum	Minimum			Average	Maximum			
Jan.	74.2	68.0	89.3	44.9	421.7	383.4	446.3	310.5		
Feb.	72.0	67.0	90.6	52.1	426.7	379.4	501.2	297.4		
Mar.	102.7	87.0	102.7	67.5	655.1	495.6	655.1	410.7		
Apr.	114.1	87.6	117.8	64.5	734.0	539.4	734.0	386.0		
May	125.5	93.7	148.4	55.0	706.3	572.3	706.3	384.8		
June	149.3	108.7	173.4	40.0	783.6	601.2	783.6	413.8		
July	113.2	126.9	196.5	95.6	865.3	691.2	865.3	591.7		
Aug.	119.1	117.1	178.4	75.4	778.6	697.7	818.4	474.1		
Sept.	95.3	99.0	146.3	65.2	540.1	549.1	668.6	389.0		
Oct.	105.6	81.4	107.7	50.9	622.7	509.4	622.7	404.8		
Nov.	79.8	68.8	84.2	47.8	473.0	424.0	503.4	353.1		
Dec.	81.4	70.4	87.0	55.6	465.0	396.2	504.2	292.4		
Yearly	1,232.2	1,075.6	1,407.9	771.5	7,472.1	6,238.9	7,472.1	5,237.9		

^a Estimated Ø Includes Laughlin Air Force Base

MUNICIPAL WATER USES
In Acre-Feet

In the United States

Month	NEW ZAPATA (Pop. 2,500)					FALCON VILLAGE (Pop. 128)				
	1954	Period 1954-1955			1955	Period May 1951-1955				
		1955	Average	Maximum		Average	Maximum	Minimum		
Jan.	5.0	13.0	9.0	13.0	5.0	3.0	4.1	7.2	2.5	
Feb.	7.6	11.3	9.4	11.3	7.6	2.6	3.9	7.1	2.6	
Mar.	10.2	21.4	15.8	21.4	10.2	6.4	6.0	10.4	3.5	
Apr.	10.5	24.7	17.6	24.7	10.5	7.0	5.1	7.0	4.3	
May	11.4	27.2	19.3	27.2	11.4	7.6	4.7	7.6	3.1	
June	13.5	21.1	17.3	21.1	13.5	10.0	5.8	10.0	2.9	
July	14.7	25.2	20.0	25.2	14.7	10.4	7.5	10.4	6.5	
Aug.	15.8	24.3	20.0	24.3	15.8	6.5	7.5	9.2	5.8	
Sept.	13.9	8.9	11.4	13.9	8.9	2.1	4.5	8.2	2.1	
Oct.	13.0	13.9	13.4	13.9	13.0	5.8	4.8	6.8	3.1	
Nov.	12.7	9.4	11.0	12.7	9.4	3.3	3.1	3.4	2.5	
Dec.	12.1	9.1	10.6	12.1	9.1	2.7	2.9	3.8	2.6	
Yearly	140.4	209.5	174.8	209.5	140.4	67.4	59.9	69.3	51.9	

Month	* ROMA (Pop. 6,550)			RIO GRANDE CITY (Pop. 6,460)		
	1955	Period 1946-1955		1955	Period 1946-1955	
		Average	Maximum		Average	Maximum
Jan.	12.9	10.1	14.9	5.0	36.0	35.1
Feb.	15.0	10.4	15.0	4.7	36.2	35.5
Mar.	21.6	13.4	21.6	7.2	50.8	40.5
Apr.	23.5	14.0	23.5	8.0	53.5	43.5
May	25.2	15.5	25.2	6.8	64.1	48.5
June	25.2	16.1	25.2	8.0	65.2	76.0
July	25.2	17.1	25.2	11.1	63.6	46.9
Aug.	23.6	16.5	23.6	7.9	65.7	54.7
Sept.	18.5	14.3	19.8	7.4	38.3	45.1
Oct.	21.1	13.4	21.1	6.3	47.3	69.6
Nov.	18.7	11.6	18.7	7.2	43.8	43.8
Dec.	18.6	11.4	18.6	5.8	41.0	38.8
Yearly	249.1	163.8	249.1	92.0	605.5	525.5
					687.4	357.4

In Mexico

Month	NUEVO LAREDO (Pop. 72,000)			NUEVA CD. GUERRERO (Pop. 3,000)		
	1955	Period 1946-1955		1955	Period Nov. 1953-1955	
		Average	Maximum		Average	Maximum
Jan.	426.8	301.7	426.8	190.4	29.2	24.7
Feb.	378.3	287.8	391.6	179.8	24.7	21.6
Mar.	510.9	362.4	510.9	235.4	30.1	25.7
Apr.	604.2	386.1	604.2	244.7	33.4	27.9
May	645.8	416.0	645.8	271.3	33.9	30.4
June	721.2	425.2	721.2	278.7	32.9	30.5
July	681.1	450.8	681.1	283.4	35.3	33.2
Aug.	621.2	453.9	628.0	324.4	36.1	33.8
Sept.	520.7	403.3	619.1	263.6	30.0	29.4
Oct.	639.9	396.0	639.9	260.6	33.5	36.1
Nov.	525.6	345.6	525.6	207.9	31.4	33.5
Dec.	462.9	331.5	462.9	197.4	32.1	31.7
Yearly	6,738.6	4,560.3	6,738.6	3,101.6	385.7	347.6
					385.7	315.3

Month	REYNOSA (Pop. 45,000)			MATAMOROS (Pop. 73,000)		
	1955	Period 1954-1955		1955	Period 1946-1955	
		Average	Maximum		Average	Maximum
Jan.	65.7	59.2	65.7	52.7	301.3	160.1
Feb.	68.1	61.2	68.1	54.3	270.7	141.9
Mar.	71.3	64.4	71.3	57.6	316.5	167.2
Apr.	73.0	65.7	73.0	58.4	311.5	167.1
May	76.2	68.9	76.2	61.6	315.0	172.6
June	76.2	68.9	76.2	61.6	285.9	162.8
July	76.2	68.9	76.2	61.6	289.3	166.9
Aug.	76.2	68.9	76.2	61.6	339.9	174.7
Sept.	74.6	66.5	74.6	58.4	293.9	177.8
Oct.	68.1	61.6	68.1	55.1	299.2	187.9
Nov.	67.3	60.8	67.3	54.3	318.0	171.5
Dec.	66.5	59.6	66.5	52.7	344.1	174.8
Yearly	859.4	774.6	859.4	689.9	3,685.3	2,025.3
					3,685.3	1,054.9

* Includes Los Saenz and Escobares, Texas and Cd. Miguel Alemán, Tamaulipas (4,000)

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

At each station, during each month of sampling, several water samples were taken by one or more of the four following methods:

A. By lowering an open small-necked bottle in one or more verticals in the stream cross section, being careful to approach but not to strike bottom, thus securing an integrated sample at all depths. A monthly composite sample was later made by using, from each sample, a quantity proportional to the river flow volume represented by each sample. The gravimetric percentage of silt in this composite represented the silt in the monthly river flow.

B. By obtaining one depth-integrated sample with a U.S.-D43 sampler at each of three verticals, spaced at 1/6, 1/2, and 5/6 of the stream width. The gravimetric percentage of silt for each measurement was computed by weighting the percentage of silt represented by each of the three samples by the partial flow in its section of the stream. These measurements were plotted on the station gage-height hydrograph from which a silt concentration graph was then drawn between plotted points. From this graph, mean daily silt concentrations were then determined.

C. By sampling at the stream surface with a separate bottle at each of three points, spaced 1/6, 1/2, and 5/6 of the stream width. A coefficient of 1.10 was applied to the average gravimetric percentage of silt in the three bottles and this product was applied to the volume of stream flow represented by that set of samples.

D. A daily composite sample was obtained by sampling, at 8-hour intervals, the water pumped directly from the river to the Nuevo Laredo water treatment plant. A monthly composite sample was later made by using from each sample a quantity proportional to the river flow volume represented by each sample. The gravimetric percentage of silt in this composite represented the silt in the monthly river flow.

For ease of comparison, the assumption is made that one cubic foot of silt weighs 66.7 pounds, or one acre-foot of silt weighs 1,452 tons.

At Lower Presidio, Johnson Ranch, and Agua Verde stations, three independent sets of samples were taken, two by Method A and one by Method B. The results by Method A show much greater consistency among themselves than exists between them and Method B.

Month	1955					Period of Record				
	Tons		Number of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot	Average	Maximum	Minimum
	Water	Silt		Average	Maximum Sample	Minimum Sample				
Jan.	725,000	57.0	31	.007857			.04	.34	1.4	.04
Feb.	385,000	23.1	28	.006008			.02	.48	2.2	.01
Mar.	6,226,000	15,800	31	.2535			10.9	13.2	33.7	1.2
Apr.	14,323,000	11,200	30	.07848			7.7	19.6	45.2	3.8
May	2,899,000	115	31	.003974			.08	14.9	63.3	.08
June	8,188,000	5,390	30	.06585			3.7	34.9	152	3.7
July	20,341,000	84,400	31	.4150			50.1	45.3	124	1.1
Aug.	16,412,000	53,800	31	.3280			37.1	39.6	66.7	11.9
Sept.	18,742,000	38,000	30	.2030			26.2	21.8	92.3	1.7
Oct.	2,007,000	249	31	.01240			.17	6.2	37.3	.17
Nov.	531,000	25.3	30	.004756			.02	.48	1.5	.02
Dec.	370,000	21.3	21	.005767			.01	.43	2.1	.01
Yearly	91,149,000	209,080.7	355	.2294			144.04	196.93	436.87	76.94

Samples and Analyses by U.S. Section, Method A

Rio Grande at El Paso, Texas

Period September 1947-1955

Month	Tons	Water	Silt	Number of Samples	Average	Maximum Sample	Minimum Sample	Acre-Feet at 1,452 Tons Per Acre Foot	Average	Maximum	Minimum
Jan.	725,000	57.0	31	.007857				.04	.34	1.4	.04
Feb.	385,000	23.1	28	.006008				.02	.48	2.2	.01
Mar.	6,226,000	15,800	31	.2535				10.9	13.2	33.7	1.2
Apr.	14,323,000	11,200	30	.07848				7.7	19.6	45.2	3.8
May	2,899,000	115	31	.003974				.08	14.9	63.3	.08
June	8,188,000	5,390	30	.06585				3.7	34.9	152	3.7
July	20,341,000	84,400	31	.4150				50.1	45.3	124	1.1
Aug.	16,412,000	53,800	31	.3280				37.1	39.6	66.7	11.9
Sept.	18,742,000	38,000	30	.2030				26.2	21.8	92.3	1.7
Oct.	2,007,000	249	31	.01240				.17	6.2	37.3	.17
Nov.	531,000	25.3	30	.004756				.02	.48	1.5	.02
Dec.	370,000	21.3	21	.005767				.01	.43	2.1	.01
Yearly	91,149,000	209,080.7	355	.2294				144.04	196.93	436.87	76.94

Samples and Analyses by Mexican Section, Method C

Rio Conchos at Cuchillo Parado, Chihuahua

Period 1945-1955

Month	Tons	Water	Silt	Number of Samples	Average	Maximum Sample	Minimum Sample	Acre-Feet at 1,452 Tons Per Acre Foot	Average	Maximum	Minimum
Jan.	20,803,000	0	0	12	0			0	0	0	0
Feb.	17,746,000	0	0	12	0			0	.46	4.0	0
Mar.	11,672,000	0	0	13	0			0	.27	3.0	0
Apr.	2,562,000	0	0	13	0			0	0	0	0
May	3,378,000	0	0	13	0			0	4.8	28.2	0
June	2,969,000	14.8	14	14	.0005	3.0330	0	.01	78.5	676	0
July	105,756,000	1,950,000	16	16	1.8437	4.1869	0	1,340	546	1,820	0
Aug.	215,433,000	1,574,000	14	14	.7304	2.9562	.2089	1,080	492	2,310	.79
Sept.									333	1,190	.32
Oct.									188	997	0
Nov.									.38	3.6	0
Dec.									.08	.83	0
Yearly									1,643.49	2,590.4	119.9

Samples and Analyses by Mexican Section, Method C

Rio Grande at Lower Presidio Station

Period October 1949-1955

Month	Tons	Water	Silt	Number of Samples	Average	Maximum Sample	Minimum Sample	Acre-Feet at 1,452 Tons Per Acre Foot	Average	Maximum	Minimum
Jan.	20,452,000	2,820	9	7	.0138	.0440	.0073	1.9	3.2	10.3	.67
Feb.	17,754,000	2,750	7	7	.0155	.0217	.0095	1.9	4.3	13.0	.15
Mar.	9,830,000	1,470	9	7	.0150	.0201	.0067	1.0	4.0	14.6	.28
Apr.									1.3	2.5	.07
May									10.9	34.4	.98
June									131	510	1.3
July									688	1,810	112
Aug.									549	2,090	3.3
Sept.									353	1,440	5.8
Oct.									119	509	1.0
Nov.									4.8	13.1	.45
Dec.									2.7	7.6	.53
Yearly									1,871.2	3,780.9	188.60

Samples and Analyses by U.S. Section, Method B (Compare with Method A, Page 67) * Some months missing # Samples collected at Old Lower Presidio Station located 11.4 miles above the confluence of Alamito Creek with the Rio Grande.

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

Month	1955						Period of Record		
	Tons		Number of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot		
	Water	Silt		Average	Maximum Sample	Minimum Sample	Average	Maximum	Minimum

Rio Grande at Lower Presidio Station

Period April-December 1955

Jan.									
Feb.									
Mar.									
Apr.	420,000	309	8	.0736	.0231	.0022	.21		
May	298,000	422	9	.1417	.1346	.0006	.29		
June	3,531,000	24,300	8	.6896	1.0767	.0084	.167		
July	• 108,542,000	1,940,000	14	1.7871	4.2745	.0021	1,340		
Aug.	• 221,466,000	2,379,000	9	1.0740	2.1692	.2115	1,640		
Sept.	128,918,000	1,056,000	9	.8189	1.0347	.0241	.727		
Oct.	• 193,038,000	1,008,000	8	.5224	.6224	.0294	.694		
Nov.	42,282,000	5,790	9	.0137	.0252	.0048	.40		
Dec.	29,313,000	1,930	8	.0066	.0150	.0000	1.3		
Yearly									

Samples and Analyses by U.S. Section, Method B (Compare with Method A, Page 67)

Rio Grande at Johnson Ranch, Texas

Period October 1949-1955

Jan.	20,414,000	1,900	13	.0093	.0151	.0016	1.3	4.4	14.7	1.0
Feb.	18,662,000	989	10	.0053	.0103	.0005	.68	6.0	17.2	.68
Mar.	10,662,000	682	12	.0064	.0092	.0041	.47	7.1	20.3	.31
Apr.	7,564,000	12,000	7	.1583	.0116	.0016	8.3	100	448	.12
May	33,858,000	76,000	4	.2245	.1354	.0084	52.3	89.2	236	0
June	14,768,000	84,300	5	.5711	.5242	.0074	58.1	610	1,330	20.7
July	120,728,000	2,756,000	9	2.2828	4.1339	.0215	1,900	1,860	4,920	156
Aug.	234,740,000	3,128,000	5	1.3325	2.2378	.7053	2,150	1,540	4,440	3.4
Sept.	173,594,000	2,127,000	5	1.2252	.8622	.0442	1,470	1,080	4,030	58.3
Oct.	206,179,000	1,913,000	4	.9276	.9018	.0384	1,320	455	1,320	1.4
Nov.	43,597,000	7,750	5	.0178	.0665	.0029	5.3	14.4	57.4	.41
Dec.	31,693,000	1,330	4	.0042	.0122	.0007	.92	7.0	25.3	.79
Yearly	916,459,000	10,108,961	83	1.103	4.1339	.0005	6,967.37	5,773.1	11,029.1	767.75

Samples and Analyses by U.S. Section, Method B (Compare with Method A, Page 67)

Rio Grande at Agua Verde Station

Period 1953-1955

Jan.	36,405,000	2,290	3	.0063	.0039	.0016	1.6	1.5	1.6	1.2
Feb.	34,410,000	2,170	4	.0063	.0066	.0034	1.5	1.0	1.5	.2
Mar.	29,097,000	1,310	5	.0045	.0070	.0022	.90	6.0	14.9	.9
Apr.	17,409,000	801	4	.0046	.0086	.0024	.55	253	758	.55
May	80,509,000	1,450,000	4	1.8006	.9730	.0000	999	629	999	1.1
June	67,370,000	260,000	5	.3856	.4910	.0304	179	604	1,630	1.8
July	146,249,000	3,820,000	5	2.6118	4.7664	.0304	2,630	1,050	2,630	218
Aug.	284,554,000	3,334,000	4	1.2602	1.6436	.7027	2,300	2,120	4,000	63.9
Sept.	• 245,587,000	1,411,000	5	.5744	1.6230	.0758	972	602	972	346
Oct.	223,817,000	1,517,000	4	.6776	1.4212	.0370	1,040	401	1,040	49.4
Nov.	63,890,000	10,400	4	.0163	.0196	.0139	7.2	5.1	7.2	2.8
Dec.	50,655,000	1,870	2	.0037	.0091	.0003	1.3	1.6	2.0	1.3
Yearly	1,259,952,000	11,810,841	49	.9374	4.7664	.0000	8,133.05	5,674.2	8,106.7	781.00

Samples and Analyses by U.S. Section, Method B (Compare with Method A, Page 67)

Rio Grande at Langtry, Texas

Period April 1944-1955

Jan.	41,697,000	1,520	7	.003654			1.0	5.3	11.4	.94
Feb.	39,001,000	582	8	.001492			.40	6.8	36.9	.40
Mar.	35,300,000	452	9	.001280			.31	7.1	27.0	.31
Apr.	22,649,000	310	6	.001369			.21	65.9	614	.21
May	97,225,000	1,267,000	9	1.3033			873	248	873	.95
June	102,134,000	479,000	9	.4686			330	575	2,450	.91
July	152,026,000	3,375,000	9	2.2199			2,320	1,590	5,780	60.9
Aug.	298,034,000	4,181,000	9	1.4027			2,880	1,230	3,900	4.7
Sept.	310,709,000	2,891,000	9	.9306			1,990	1,330	3,280	1.0
Oct.	237,328,000	1,117,000	10	.4705			769	727	3,261	5.1
Nov.	73,341,000	8,890	8	.01212			6.1	24.7	88.2	1.3
Dec.	57,954,000	2,460	9	.004251			1.7	8.5	46.8	.18
Yearly	1,467,398,000	13,324,214	102	.9080			9,171.72	5,818.3	9,171.72	645.10

Samples and Analyses by U.S. Section, Method A

Pecos River near Shumla, Texas

Period November 1954-1955

Jan.	16,894,000	288	4	.001706			.20			
Feb.	13,974,000	318	4	.002279			.22			
Mar.	15,621,000	429	5	.002749			.30			
Apr.	13,009,000	89.1	4	.0006849			.06			
May	20,331,000	420	4	.002067			.29			
June	26,760,000	1,240	5	.004637			.85			
July	40,538,000	32,300	5	.07971			22.2			
Aug.	36,047,000	34,600	7	.05956			23.8			
Sept.	40,128,000	4,730	5	.01179			3.3			
Oct.	24,970,000	1,400	4	.005590			.96			
Nov.	16,527,000	40.0	4	.0002419			.03	.18	.34	.03
Dec.	16,746,000	326	5	.001947			.22	.18	.22	.15
Yearly	281,545,000	76,180.1	56	.02706			52.43			

Samples and Analyses by U.S. Section, Method A

* Partly estimated

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

Month	1955						Period of Record		
	Tons		Number of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot		
	Water	Silt		Average	Maximum Sample	Minimum Sample	Average	Maximum	Minimum

8 Rio Grande near Del Rio, Texas

Period August-December 1955

Jan.									
Feb.									
Mar.									
Apr.									
May									
June									
July									
Aug.	380,142,000	2,861,000	9	.7527			1,970		
Sept.	534,626,000	3,425,000	13	.6406			2,360		
Oct.	324,639,000	1,107,000	13	.3411			762		
Nov.	143,151,000	15,500	12	.01085			10.7		
Dec.	118,241,000	5,790	12	.004901			4.0		
Yearly									

Samples and Analyses by U.S. Section, Method A

Rio Grande at Eagle Pass, Texas

Period 1934-1955

Jan.	99,956,000	17,100	19	.0171			11.8	19.5	124	.07
Feb.	81,021,000	24,800	24	.03056			17.1	48.4	768	2.6
Mar.	68,422,000	23,200	27	.03385			16.0	24.4	188	3.8
Apr.	41,430,000	11,000	25	.02665			7.6	102	920	3.0
May	176,578,000	498,000	26	.2822			343	509	4,220	1.9
June	141,003,000	401,000	25	.2845			276	‡ 9.13	‡ 4,340	.59
July								‡ 1,324	‡ 7,840	12.0
Aug.								1,034	5,310	14.8
Sept.								2,384	10,800	7.0
Oct.								950	5,820	3.7
Nov.								103	562	4.4
Dec.								21.4	84.1	1.1
Yearly								7,432.7	20,842.8	1,633.2

Samples by Mexican Section and Analyses by U.S. Section, Method A

Rio Grande at Laredo, Texas

Period 1953-1955

Jan.	133,005,000	18,800	31	.01413			12.9	8.4	12.9	4.5
Feb.	114,620,000	15,600	28	.01357			10.7	5.1	10.7	2.2
Mar.	77,726,000	5,320	31	.006842			3.7	10.4	26.8	.82
Apr.	48,226,000	684	30	.001418			.47	123	364	.47
May	183,258,000	363,000	31	.1979			250	327	660	72.3
June	139,946,000	42,700	27	.03048			29.4	398	‡ 767	29.4
July	254,306,000	2,198,000	11	.8623			1,510			
Aug.	145,677,000	2,842,000	31	.6376			1,960	1,130	1,960	57.1
Sept.	528,596,000	2,822,000	18	.5338			1,940	904	1,940	41.3
Oct.	346,799,000	2,135,000	20	.6155			1,470	588	1,470	29.7
Nov.	163,035,000	14,600	24	.008960			10.1	9.8	13.1	6.1
Dec.	138,208,000	9,530	31	.006897			6.6	5.4	6.6	3.9
Yearly	2,574,025,000	10,467,234	313	.4066			7,203.87			

Samples by Mexican Section and Analyses by U.S. Section, Method A

Rio Grande at Falcón Dam-U.S. Tailrace

Period July-December 1955

Jan.										
Feb.										
Mar.										
Apr.										
May										
June										
July	107,005,000	1,310	12	.001224			.90			
Aug.	264,446,000	3,720	13	.001406			2.6			
Sept.	21,245,000	1,120	4	.005287			.77			
Oct.	117,424,000	3,230	9	.002749			2.2			
Nov.	149,821,000	1,190	10	.0007937			.82			
Dec.	252,758,000	2,840	10	.001124			2.0			
Yearly										

Samples and Analyses by U.S. Section, Method A

Rio Alamo at Cd. Mier, Tamaulipas

Period 1934-1955

Jan.	0	0	0	0	0	0	0	2.2	21.8	0
Feb.	0	0	0	0	0	0	0	.33	6.6	0
Mar.	0	0	0	0	0	0	0	7.8	91.6	0
Apr.	0	0	0	0	0	0	0	30.9	227	0
May	4,689,000	18,200	2	.389	.455	0	12.5	42.3	230	0
June	492,000	718	1	.146	.206	0	.49	63.0	471	0
July	2,386,000	24,700	2	1.036	1.329	0	17.0	17.4	92.8	0
Aug.	2,105,000	6,360	1	.302	.675	0	4.4	189	1,610	0
Sept.	80,488,000	463,000	15	.575	.875	0	319	251	2,920	0
Oct.	8,415,000	17,400	10	.207	.348	0	12.0	80.4	558	0
Nov.	4,518,000	59,100	2	1.308	1.752	0	40.7	2.8	40.7	0
Dec.	62,800	0	0	0	0	0	0	1.0	16.1	0
Yearly	103,155,800	589,478	33	.571	1.752	0	406.09	688.13	3,156.57	126.7

Samples and Analyses by Mexican Section, Method C ^a Estimated ^b Some months missing ^c Excluding 1954 Flood ^d Discharge based on records of flow at gaging station "Below Diablo Dam Site" and "Arroyo las Vacas".

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

Month	1955						Period of Record		
	Tons		Number of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot		
	Water	Silt		Average	Maximum Sample	Minimum Sample	Average	Maximum	Minimum

† Rio Grande at Roma, Texas

Period January 1954-January 1955

Jan.	482,203,000	13,200	4	.002740			9.1	12.2	15.3	9.1
Feb.										
Mar.										
Apr.										
May										
June										
July										
Aug.										
Sept.										
Oct.										
Nov.										
Dec.										
Yearly										

Samples by Mexican Section and Analyses by U.S. Section, Method A

Rio Grande near San Benito, Texas

Period April-December 1955

Jan.										
Feb.										
Mar.										
Apr.	47,337,000	9,750	4	.02060						
May	50,172,000	10,300	5	.02052						
June	56,318,000	9,100	4	.005498						
July	29,531,000	1,590	4	.005400						
Aug.	16,371,000	1,720	5	.0105						
Sept.	15,651,000	35,500	3	.2271						
Oct.	7,641,000	575	5	.007530						
Nov.	16,882,000	517	4	.003065						
Dec.	20,752,000	548	4	.002640						
Yearly										

Samples and Analyses by U.S. Section, Method A

Rio Grande at Lower Brownsville, Texas

Period April-December 1955

Jan.										
Feb.										
Mar.										
Apr.	12,318,000	1,160	4	.009440						
May	8,451,000	703	4	.008320						
June	10,754,000	445	4	.004137						
July	21,057,000	1,600	4	.007590						
Aug.	8,226,000	4,200	5	.05108						
Sept.	16,711,000	3,360	3	.02012						
Oct.	2,566,000	216	5	.008434						
Nov.	6,118,000	221	4	.003614						
Dec.	5,767,000	222	4	.003846						
Yearly										

Samples and Analyses by U.S. Section, Method A # Some months missing † Except for tributary inflow and diversions below Falcón Dam, flow at this station, after August 25, 1953, was controlled largely by releases from Falcón Reservoir, 21 miles upstream. For this reason, the 1955 records have not been combined with those for the period March 1929-1953.

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

Month	1955								Period of Record		
	Tons			Number of Samples	Gravimetric %		Acre-Feet at 1,452 Tons Per Acre Foot				
	Water	Silt			Samples Set No. 1	Samples Set No. 2	Average of Sets #1 & #2	Average	Maximum	Maximum	Minimum
		Samples Set No. 1	Samples Set No. 2								

® Rio Grande at Lower Presidio Station

Period October 1951-1955

Jan.	20,452,000	4,870	4,790	18	.0238	.0234	3.3	1.1	3.3	.17
Feb.	17,754,000	3,070	2,570	14	.0173	.0145	1.9	.85	1.9	.15
Mar.	9,830,000	1,980	1,700	18	.0201	.0173	1.3	.75	1.3	.20
Apr.								2.1	6.1	.09
May								15.1	41.5	.87
June								150	415	5.5
July								746	1,900	145
Aug.								723	2,070	4.5
Sept.								95.9	161	32.3
Oct.								28.9	110	1.0
Nov.								1.4	2.2	.70
Dec.								.88	1.3	.62
Yearly								1,765.98	2,584.79	308.94

Samples and Analyses by U.S. Section, Method A (Compare with Method B, Page 63)

Rio Grande at Lower Presidio Station

Period 1955

Jan.	20,285,000	4,380	4,240	16	.0216	.0209	3.0			
Feb.	18,131,000	2,520	2,740	14	.0139	.0151	1.8			
Mar.	10,475,000	1,600	1,390	20	.0153	.0133	1.0			
Apr.	420,000	298	289	14	.0709	.0689	.20			
May	298,000	327	280	18	.1097	.0940	.21			
June	3,531,000	24,500	29,700	16	.6944	.8421	18.7			
July	* 108,542,000	2,037,000	2,085,000	28	1.8764	1.9212	1,420			
Aug.	* 221,466,000	1,914,000	2,043,000	18	.8642	.9223	1,360			
Sept.	128,918,000	722,000	700,000	18	.5604	.5428	490			
Oct.	* 193,038,000	500,000	489,000	16	.2590	.2535	341			
Nov.	42,282,000	6,550	6,980	18	.0155	.0165	4.7			
Dec.	29,313,000	3,720	3,690	16	.0127	.0126	2.6			
Yearly	776,699,000	5,216,895	5,366,309	212	.6717	.6909	3,643.21			

Samples and Analyses by U.S. Section, Method A (Compare with Method B, Page 64)

Rio Grande at Johnson Ranch, Texas

Period October 1951-1955

Jan.	20,414,000	1,690	1,760	26	.0083	.0086	1.2	1.0	1.2	.84
Feb.	18,662,000	1,330	1,530	20	.0071	.0082	.98	.85	1.0	.67
Mar.	10,662,000	1,040	1,020	24	.0098	.0096	.71	1.4	4.3	.20
Apr.	7,564,000	8,730	9,080	14	.1154	.1200	6.1	217	692	.08
May	33,858,000	45,000	43,200	8	.1328	.1277	30.4	159	304	0
June	14,768,000	50,300	50,800	10	.3403	.3437	34.8	694	1,570	31.6
July	120,728,000	2,535,000	2,791,000	18	2.0998	2.3116	1,830	1,677	4,030	182
Aug.	234,740,000	2,919,000	2,859,000	10	1.2433	1.2179	1,990	1,495	3,840	2.8
Sept.	173,594,000	1,256,000	1,286,000	10	.7238	.7409	875	400	875	98.5
Oct.	206,179,000	591,000	608,000	8	.2867	.2947	413	196	492	2.4
Nov.	43,597,000	7,850	7,720	10	.0180	.0177	5.4	2.1	5.4	.28
Dec.	31,693,000	2,920	4,120	8	.0092	.0130	2.4	11.2	48.3	.49
Yearly	916,459,000	7,419,860	7,663,230	166	.8096	.8362	5,189.99	4,854.55	6,970.30	1,173.81

Samples and Analyses by U.S. Section, Method A (Compare with Method B, Page 64)

Rio Grande at Agua Verde Station

Period 1953-1955

Jan.	36,405,000	2,150	2,480	8	.0059	.0068	1.6	2.0	2.4	1.6
Feb.	34,410,000	1,340	2,310	8	.0039	.0067	1.3	.98	1.5	.15
Mar.	29,097,000	2,560	1,660	10	.0088	.0057	1.5	2.9	6.3	.95
Apr.	17,409,000	836	1,270	8	.0048	.0073	.73	75.7	224	.73
May	80,509,000	516,000	499,000	8	.6407	.6197	350	407	871	.60
June	67,370,000	129,000	126,000	10	.1915	.1875	87.8	523	1,480	.64
July	146,249,000	5,357,000	5,261,000	10	3.6630	3.5975	3,660	1,368	3,660	203
Aug.	264,554,000	3,695,000	3,981,000	8	1.3968	1.5047	2,640	2,660	5,230	109
Sept.	* 243,587,000	1,204,000	1,221,000	10	.4901	.4971	835	526	835	228
Oct.	223,817,000	1,452,000	1,419,000	8	.6488	.6342	989	386	989	41.8
Nov.	63,890,000	5,620	8,050	8	.0088	.0126	4.7	3.8	4.7	2.8
Dec.	50,655,000	4,910	4,910	10	.0097	.0097	3.4	2.0	3.4	.90
Yearly	1,259,952,000	12,370,416	12,527,680	106	.9818	.9943	8,575.03	5,957.38	8,656.15	636.79

Samples and Analyses by U.S. Section, Method A (Compare with Method B, Page 64) * Some months missing ® Samples collected at old Lower Presidio station, located 11.4 miles above the confluence of Alamito Creek with the Rio Grande.

* Partly estimated

CHEMICAL ANALYSIS OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1955

The following chemical analyses are from composites made up periodically from independent water samples composed by taking from each sample an amount of water proportional to the volume of river flow represented by that sample. This compositing and the determination of the electrical conductivity of the individual water samples were done by the United States Section of the International Boundary and Water Commission. Chemical analyses were made by the U. S. Department of Agriculture, Agricultural Research Service, U. S. Salinity Laboratory, Riverside, California.

To convert milligram equivalents to parts per million by weight, multiply each ion by its appropriate conversion factor. These factors are: Ca, 20; Mg, 12.16; Na, 23; (CO₃ plus HCO₃), expressed as CO₃, 30.0; SO₄, 48; Cl, 35.5; NO₃, 62. To convert tons per acre-foot to parts per million, multiply tons per acre-foot by 735.5.

Electrical conductivity, reported in the following tables as ECx10⁶ at 25°C, is a relative measure of the total salt concentration in the water samples.

Month	No. of Sam- ples	Dissolved Solids		Mean ECx10 ⁶ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter						
		Tons Per Acre Foot	Total Tons						Ca	Mg	Na	CO ₃ + HCO ₃	SO ₄	Cl	NO ₃

Sampling by U.S. Section															
Rio Grande at El Paso, Texas															
Jan.	31	2.85	1,520	3,210	.66	8.4	76	42	5.85	1.74	25.26	5.65	13.63	13.82	T
Feb.	28	3.28	928	3,610	.63	8.3	77	42	6.00	2.57	28.96	5.25	16.54	16.05	T
Mar.	31	1.64	7,510	1,860	.20	7.7	54	39	6.41	2.39	10.22	3.20	8.50	7.50	.04
Apr.	30	1.58	16,000	1,720	.21	7.8	49	26	6.76	2.48	9.00	3.05	10.45	4.85	.02
May	31	1.86	3,940	2,000	.30	8.0	56	31	6.92	2.45	11.88	3.35	11.35	6.60	T
June	30	1.55	9,330	1,670	.24	8.1	53	30	5.96	2.15	9.30	3.05	9.27	5.20	.01
July	30	1.09	16,400	1,200	.08	7.8	50	28	4.50	1.65	6.37	3.10	6.03	3.50	T
Aug.	31	1.12	13,600	1,270	.11	8.0	51	33	4.72	1.69	6.73	2.90	5.98	4.30	.01
Sept.	30	1.34	18,500	1,450	.22	8.0	48	24	5.80	2.05	7.28	2.65	8.96	3.70	.03
Oct.	31	1.55	2,290	1,800	.34	8.1	76	43	2.95	1.36	13.32	3.00	7.21	7.70	T
Nov.	30	2.78	1,090	3,120	.54	8.5	76	45	5.40	2.39	24.02	3.90	13.82	14.35	T
Dec.	21	3.86	1,050	4,190	.76	8.3	77	44	6.92	3.16	34.16	5.37	19.54	19.80	T
Mean @	9354	1.38	92,778	1,520	.193	7.9	52	29	5.50	2.00	8.35	3.01	8.17	4.78	.015
Period Average		1.10	548,000	1,220			53	30	4.36	1.61	6.64	3.52	5.43	3.78	
Tons of Constituents,			1955						10,100	2,220	17,500	8,240	35,800	15,500	
Average Tons Period			1930-1955						58,900	13,200	103,000	71,300	176,000	90,300	

Sampling by U.S. Section															
Rio Grande at Fort Quitman, Texas															
Jan.	4	11.80	386	12,000	.59	8.0	57	77	38.25	19.51	76.25	2.52	27.74	103.5	T
Feb.	4	11.70	234	12,100	.66	8.0	58	77	38.20	19.28	78.80	2.60	28.44	105.8	T
Mar.	3	12.45	123	13,300	.72	7.8	57	79	41.45	23.11	85.50	2.15	29.75	118.2	.01
Apr.			No Flow												
May	"	12.45	47	13,300			57	79	41.45	23.11	85.50	2.15	29.75	118.2	
June	"	.46	681	505	.13	8.0	30	10	2.95	.70	1.61	3.30	1.46	.56	.02
July	i	.59	421	695			83	17	.85	.36	5.91	2.95	2.95	1.20	
Aug.	"	.59	401	695	.33	8.0	83	17	.85	.36	5.91	2.95	2.95	1.20	.04
Sept.	4	.59	1,600	643	.30	8.2	70	23	1.31	.58	4.34	2.28	2.51	1.45	.02
Oct.	5	12.7	292	12,800	.55	7.8	58	76	38.65	21.02	83.90	4.05	30.93	109.5	T
Dec.	4	11.5	274	11,800	.66	7.7	58	75	36.25	18.83	76.85	4.05	28.65	99.62	T
Mean @	929	.757	94,459	845			63	36	2.32	.933	5.47	2.71	2.86	3.18	
Period Average		2.35	445,000	2,680			61	55	7.55	3.09	16.66	3.59	8.67	15.14	
Tons of Constituents,			1955						372	90.8	1,010	651	1,100	903	
Average Tons Period			1930-1955						38,900	9,650	98,500	27,700	107,000	138,000	

Sampling by U.S. Section																
Rio Grande at Upper Presidio Station																
Jan.	1	.74	31.2	781	.21	8.1	25	14	5.60	.47	2.02	1.63	5.43	1.15	.02	
Feb.		No Flow														
Mar.		No Flow														
Apr.	"	.74	13.8	781			25	14	#	6.07						
May		No Flow														
June	"	.65	147	695	.32		31	12	#	5.05	2.37	3.15				
July	8	.67	1,500	713	.28	7.9	31	12	#	4.39	2.43	3.23				
Aug.	12	.47	1,890	531			44		#	2.98	2.30	2.40				
Sept.	6	.54	3,690	624			41		#	3.68	2.51	2.01				
Oct.	9	.55	6,000	611			40		#	3.68	2.42	2.37				
Nov.	6	1.19	31.0	6,220			51		#	33.03	34.84	2.75				
Dec.		No Flow														
Mean @	942	.548	13,303.0	613					#	3.73	2.43	2.36			.891	
Period Average	1,922	342,000	2,170						#	8.92	12.93	3.13			11.13	
Tons of Constituents,			1955								1,850	2,340				1,040
Average Tons Period			1935-1955								72,000	22,700				95,500

* Estimated T Trace # Total @ Weighted mean ** Percent of total cations *** Percent of total anions # Sum of calcium and magnesium

**CHEMICAL ANALYSIS OF WATER SAMPLES FROM THE RIO GRANDE
AND TRIBUTARIES - 1955**

Month	No. of Sam- ples	Dissolved Solids		Mean ECx10 ⁶ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter						
		Tons Per Acre Foot	Total Tons						Ca	Mg	Na	CO ₃ + HCO ₃	SO ₄	Cl	NO ₃

Río Conchos near Ojinaga, Chihuahua

Sampling by Mexican Section															
Jan.	4	1.47	20,300	1,490	.35	8.1	54	23	5.24	1.72	8.58	2.47	9.39	3.65	.03
Feb.	3	1.38	16,200	1,390			53	#	6.86		7.68	2.47		3.20	
Mar.	5	1.47	9,330	1,560			50	#	8.26		8.30		3.10		3.85
Apr.	4	1.62	455	1,680			43	#	10.15		7.75	3.27		3.95	
May	5	1.66	530	1,700			45	#	9.85		8.10	2.55		4.45	
June	5	1.77	2,120	1,910			53	#	8.96		10.25	2.55		6.70	
July	7	1.01	69,200	972	.09	8.0	14	6	8.05	1.12	1.57	2.67	7.73	.65	T
Aug.	7	.74	109,000	764			30	#	5.37		2.26	2.70		1.30	
Sept.	4	.86	60,500	934			42	#	5.61		4.06	2.85		1.50	
Oct.	5	.65	82,000	683			35	#	4.58		2.42	2.50		.82	
Nov.	4	1.21	33,800	1,260			47	#	6.77		6.07	3.05		2.30	
Dec.	4	1.34	24,900	1,380			47	#	7.66		6.70	3.55		2.85	
Mean #	.97	.870	428,335	897			35	#	6.03		3.26	2.71		1.39	
Period Average	.630	510,000	672				38	#	4.25		2.65	2.61		.969	
Tons of Constituents,			1955								50,200	54,500		33,000	
Average Tons Period			1935-1955								67,000	86,000		37,800	

Rio Grande at Johnson Ranch, Texas

Sampling by U.S. Section															
Jan.	13	1.51	22,600	1,580	.36	8.2	51	24	6.10	1.84	8.38	2.63	9.99	3.90	.01
Feb.	10	1.46	20,000	1,500			53	#	7.26		8.20	2.37		3.50	
Mar.	12	1.47	11,500	1,570			54	#	7.46		8.65	2.30		3.65	
Apr.	10	1.00	5,370	1,040			43	#	6.17		4.65	2.35		1.85	
May	12	.75	18,700	816			44	#	4.68		3.68	2.37		1.00	
June	9	.88	9,590	937			47	#	4.98		4.46	2.85		1.80	
July	10	.70	62,200	726	.04	8.0	30	6	4.60	.74	2.31	3.17	4.14	.50	.02
Aug.	.57	.98,600	626				34	#	4.18		2.12	2.40		1.20	
Sept.	6	.79	101,100	852			33	#	5.90		2.92	2.43		1.25	
Oct.	4	.62	94,200	665			38	#	4.08		2.52	2.67		.95	
Nov.	5	1.26	40,400	1,320			46	#	7.43		6.36	3.15		2.75	
Dec.	4	1.38	32,200	1,430			48	#	7.76		7.27	3.20		3.25	
Mean #	.0102	.765	516,660	817			38	#	5.15		3.22	2.64		1.35	
Period Average	.909	498,000	965				44	#	5.52		4.27	2.70		1.91	
Tons of Constituents,			1955								68,000	72,700		44,000	
Average Tons Period			1948-1955								73,100	60,400		50,400	

Rio Grande at Langtry, Texas

Sampling by U.S. Section															
Jan.	7	.94	28,900	1,010	.24	7.9	45	22	3.71	1.88	4.71	2.27	5.71	2.30	.03
Feb.	8	.98	28,100	1,050	.17	8.2	45	20	4.24	1.83	5.00	2.90	6.03	2.22	.01
Mar.	9	.88	22,900	995	.24	8.0	45	22	3.64	2.08	4.65	2.55	5.57	2.30	.01
Apr.	6	.65	10,900	740	.20	7.9	39	20	2.62	1.99	3.00	2.50	3.59	1.55	.01
May	11	.62	44,300	688	.13	8.1	31	9	4.09	.83	2.22	3.10	3.50	.65	.02
June	12	.46	34,600	509	.09	7.9	22	9	3.34	.77	1.17	3.07	1.80	.50	.04
July	10	.72	80,600	736	.07	7.8	25	6	4.95	.83	1.00	2.95	4.55	.45	.04
Aug.	12	.67	147,000	712	.14	8.2	32	11	4.32	.72	2.42	2.70	3.98	.85	.06
Sept.	10	.56	128,000	642	.04	8.1	28	13	4.20	.74	1.90	2.47	3.46	.90	.03
Oct.	13	.62	108,000	668	.13	8.0	32	13	3.98	.81	2.22	2.75	3.39	.90	.03
Nov.	8	.95	51,300	1,020	.21	8.4	42	18	4.55	1.68	4.48	3.13	5.63	1.95	.03
Dec.	9	.99	42,200	1,050	.18	7.8	42	19	4.50	1.89	4.72	3.15	5.91	2.15	.03
Mean #	.0115	.673	726,800	730	.118	8.05	32	13	4.18	.970	2.42	2.76	3.94	1.02	.036
Period Average	.765	732,000	787				376	#	1.11		3.54	2.66	4.10	1.77	
Tons of Constituents,			1955						123,000	17,300	81,700	122,000	278,000	53,100	
Average Tons Period			1945-1955						98,000	17,500	106,000	104,000	256,000	81,600	

Pecos River near Shumla, Texas

Sampling by U.S. Section															
Jan.	4	2.68	33,200	3,090	.19	8.3	54	61	8.35	6.04	16.86	3.00	9.25	19.18	.04
Feb.	4	2.94	30,300	3,410	.21	8.1	56	62	8.82	6.52	19.66	2.90	10.52	21.84	.05
Mar.	5	3.12	35,900	3,700	.26	7.9	58	63	8.90	7.01	21.60	2.60	11.32	23.85	.03
Apr.	4	2.98	28,500	3,530	.25	7.7	60	65	7.85	6.43	21.60	1.95	10.76	23.30	.02
May	4	2.58	38,700	3,100	.21	7.9	59	63	7.82	4.92	18.00	2.10	9.25	19.65	.02
June	6	2.27	44,700	2,690	.18	7.8	56	62	6.44	5.19	14.97	2.33	7.82	16.65	.02
July	6	.96	28,600	1,140	.17	7.9	47	54	3.99	1.78	5.29	2.30	2.71	5.90	.07
Aug.	8	1.54	40,800	1,830	.21	8.0	53	58	5.25	3.31	9.51	2.47	5.09	10.75	.07
Sept.	5	1.43	42,200	1,790	.19	8.1	52	58	5.30	3.31	9.15	2.83	4.51	10.40	.07
Oct.	4	1.74	32,000	2,100	.20	8.0	53	58	5.79	3.99	11.00	2.85	5.87	12.10	.09
Nov.	4	2.08	25,400	2,410	.09	7.9	54	59	6.30	4.78	12.91	2.85	7.00	14.30	.09
Dec.	3	2.15	26,400	2,500	.18	8.0	53	59	6.62	5.28	13.37	2.95	7.39	15.10	.06
Mean #	1.959	1.96	406,700	2,330	.192	8.0	55	60	6.25	4.32	12.72	2.58	6.67	14.16	.057
Period Average									35,300	14,800	82,400	21,800	90,300	141,000	
Tons of Constituents,			1955						98,000	17,500	106,000	104,000	256,000	81,600	
Average Tons Period			1945-1955												

T Trace # Total @ Weighted mean ** Percent of total cations *** Percent of total anions # Sum of calcium and magnesium

**CHEMICAL ANALYSIS OF WATER SAMPLES FROM THE RIO GRANDE
AND TRIBUTARIES - 1955**

Month	No. of Sam- ples	Dissolved Solids		Mean ECx10 ⁶ @25°C	Boron p.p.m.	pH	% Na ⁺ **	% Cl ⁻ ***	Mean Milligram Equivalents per Liter						
		Tons Per Acre Foot	Total Tons						Ca	Mg	Na	CO ₃ + HCO ₃	SO ₄	Cl	NO ₃

Sampling by Mexican Section

Rio San Diego at Jiménez, Coahuila

Jan.	4	.44	1,900	471	.08	8.1	15	10	3.59	.60	.72	3.40	.96	.50	.05
Feb.	4	.43	1,520	463			15	#	4.18		.73	3.11		.65	
Mar.	4	.42	1,340	490			15		# 4.28		.76	3.45		.60	
Apr.	4	.37	903	427			20		# 3.48		.85	2.60		.65	
May	4	.34	1,470	425			17		# 3.58		.71	2.60		.65	
June	4	.38	1,240	452			16		# 3.98		.78	3.05		.85	
July	2	.46	948	505	.10	8.0	15	16	3.49	.94	.78	3.17	1.13	.85	.02
Aug.	2	.32	983	360			11		# 3.28		.40	2.73		.82	
Sept.	4	.39	1,100	468			14		# 4.28		.68	3.55		.75	
Oct.	4	.37	955	436			15		# 3.78		.65	3.00		.50	
Nov.	4	.38	977	440			13		# 3.97		.61	3.33		.50	
Dec.	3	.37	969	448			14		# 3.92		.62	3.15		.55	
Mean #	Ø 43	Ø 389	Ø 14,285	448			15		# 3.94		.692	3.09		.650	
Period Average	374	374	19,400	414			16		# 3.60		.678	2.65			
Tons of Constituents, 1955											794	4,630		1,150	
Average Tons Period	1950-1955										1,100	5,610		1,440	

Sampling by Mexican Section

Rio San Rodrigo near El Moral, Coahuila

Jan.	4	.46	869	508	.09	8.2	17	16	3.56	.69	.88	2.95	1.28	.80	.10
Feb.	4	.46	580	515			19	#	4.23		1.00	2.80		.90	
Mar.	4	.35	557	419			17	#	3.58		.72	2.60		.60	
Apr.	4	.30	152	372			16	#	3.18		.61	2.75		.50	
May	4	.25	98.0	312			12	#	2.79		.37	2.51		.30	
June	1	.23	54.5	286			9	#	2.79		.27	2.60		.40	
July	2	.23	6.7	286			9	#	2.79		.27	2.60		.40	
Aug.	2	.31	480	347			11	#	3.18		.38	2.75		.80	
Sept.	4	.28	53.8	352			9	#	3.38		.34	3.00		.40	
Oct.	4	.33	188	412			13	#	3.78		.50	3.21		.50	
Nov.	4	.33	245	379			15	#	3.30		.58	2.75		.55	
Dec.	3	.29	251	356			9	#	3.38		.33	3.10		.35	
Mean #	Ø 38	Ø .360	Ø 3,335	416			15	#	3.63		.631	2.83		.653	
Period Average	337	9,800	369				13	#	3.31		.496	2.59		.434	
Tons of Constituents, 1955											183	1,070		292	
Average Tons Period	1950-1955										451	3,070		609	

Sampling by Mexican Section

Rio Grande at Eagle Pass, Texas

Jan.	22	.90	66,200	1,060	.19	8.1	45	40	3.64		2.10	4.68	2.23	3.99	4.15	.08
Feb.	24	1.12	66,800	1,270			46	#	6.86		5.86	2.50		5.10		
Mar.	27	.92	46,300	1,140			46	#	6.07		5.08	2.67		4.45		
Apr.	26	.94	28,700	1,150			47	#	6.02		5.28	2.45		4.90		
May	26	.72	93,600	843			39	#	5.07		3.24	2.80		2.50		
June	25	.71	73,700	827			39	#	5.02		3.20	2.81		3.10		
July																
Sampling at this station discontinued																
Mean #	Ø 150															
Period Average																
Tons of Constituents, 1955																
Average Tons Period	1950-1955															

Sampling by Mexican Section

Rio Grande at Nuevo Laredo, Tamaulipas

Jan.																
Feb.																
Mar.																
Apr.																
May																
June																
July	31	.67	126,000	760	.16	8.1	36	31	3.75		1.17	2.82	2.90	2.45	2.45	.07
Sampling for chemical analyses began at this station July 1955																
Aug.	31	.60	197,000	679			34	#	4.48		2.28	2.60		1.85		
Sept.	25	.60	233,000	707			35	#	4.73		2.52	2.80		1.80		
Oct.	20	.68	174,000	736			33	#	4.98		2.48	2.71		1.30		
Nov.	19	.84	101,000	950			45	#	5.21		4.27	2.40		3.00		
Dec.	31	.83	86,400	978			44	#	5.40		4.30	2.70		3.30		
Mean #	Ø 157															
Period Average																
Tons of Constituents, 1955																
Average Tons Period	1950-1955															

* Estimated Ø Total # Weighted mean ** Percent of total cations *** Percent of total anions # Sum of calcium and magnesium

**CHEMICAL ANALYSIS OF WATER SAMPLES FROM THE RIO GRANDE
AND TRIBUTARIES - 1955**

Month	No. of Sam- ples	Dissolved Solids		Mean ECx10 ⁶ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter					
		Tons Per Acre Foot	Total Tons						Ca	Mg	Na	CO ₃ + HCO ₃	SO ₄	Cl

Sampling by Mexican Section

Río Salado at Las Tortillas, Tamaulipas

Jan.	No	Flow												
Feb.	No	Flow												
Mar.	No	Flow												
Apr.	No	Flow												
May	9	.89	15,200	996			41		# 5.87		4.10	2.31		2.75
June	4	1.48	2,450	550	.49	8.0	28	39	# 4.08		1.56	2.60		.85
July	1	1.34	261	1,360				27		2.12	5.67	2.06	8.57	4.00
Aug.	8	.39	12,400	455			20		# 3.68		.90	2.85		1.00
Sept.	10	.42	60,800	506			19		# 4.03		.94	2.57		.90
Oct.	2	.64	6,100	742			32		# 5.01		2.38	2.47		1.85
Nov.	2	2.49	6,150	2,590			48		# 14.23		13.40	1.60		10.50
Dec.	3	3.02	489	3,070			50		# 16.52		16.60	1.30		12.95
Mean @	9	.39	1,492	9	103,850	577		25	# 4.31		1.43	2.57		1.23
Period Average														
Tons of Constituents, Average Tone Period											9,440	22,100		12,500

Sampling by U.S. Section

Rio Grande at Falcón Dam-U.S. Tailrace

Jan.														
Feb.														
Mar.														
Apr.														
May														
June	Sampling for chemical analyses began at this station July 1955													
July	12	.76	59,800	850	.10	7.8	41	35	3.44	1.60	3.68	2.50	3.19	3.10
Aug.	13	.70	136,000	838	.20	8.1	43	37	3.38	1.38	3.58	2.25	3.02	3.10
Sept.	5	.64	9,980	788	.13	8.0	44	33	3.22	1.28	3.50	2.27	3.14	.04
Oct.	9	.61	52,700	700	.21	8.2	38	29	3.18	1.12	2.66	2.25	2.75	2.02
Nov.	10	.60	66,000	703	.10	8.0	41	27	3.22	.99	2.86	2.30	2.90	.03
Dec.	10	.61	113,000	710	.14	8.0	38	27	3.30	1.25	2.74	2.40	2.94	2.00
Mean @	9	.59		9										
Period Average														
Tons of Constituents, Average Tone Period														

Sampling by Mexican Section

Rio Grande at Roma, Texas

Jan.	4	.56	199,000	646	.12	8.1	32	25	3.52	.89	2.10	2.80	2.13	1.65
Feb.														
Mar.														
Apr.														
May														
June														
July														
Aug.														
Sept.														
Oct.														
Nov.														
Dec.														
Mean @	9	4		9										
Period Average														
Tons of Constituents, Average Tone Period														

* Total @ Weighted mean ** Percent of total cations *** Percent of total anions # Sum of calcium and magnesium

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1955

Date	ECx10 ⁶ @25°C														
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Rio Grande at El Paso, Texas

January	February	March	April	May	June	July	August	September	October	November
1 3,240	6 3,250	14 3,660	19 1,680	25 3,850	1 1,580	8 1,110	14 1,430	21 1,710	27 4,210	
2 3,200	7 3,280	15 3,510	20 1,720	26 5,010	2 1,580	9 1,340	15 1,430	22 1,720	28 4,370	
3 3,290	8 3,290	16 3,690	21 1,740	27 5,500	3 1,530	10 1,930	16 1,740	23 1,730	29 4,070	
4 3,230	9 3,380	17 4,610	22 1,740	28 4,150	4 1,520	11 873	17 2,210	24 1,830	30 4,040	
5 3,170	10 3,530	18 3,770	23 1,740	29 5,060	5 1,560	12 1,230	18 2,060	25 1,690	December	
6 3,180	11 3,620	19 3,790	24 1,730	30 4,380	6 1,540	13 1,160	19 2,240	26 1,990	1 3,990	
7 3,240	12 3,550	20 4,150	25 1,980	31 4,060	7 1,490	14 1,290	20 2,480	27 2,000	2 4,260	
8 3,210	13 3,760	21 4,630	26 2,150	June	8 1,480	15 1,260	21 1,940	28 1,980	3 5,150	
9 3,210	14 3,750	22 4,070	27 2,420	1 3,830	9 1,500	16 1,390	22 1,950	29 1,720	4 5,000	
10 3,170	15 3,580	23 4,720	28 2,960	2 4,470	10 1,480	17 1,160	23 1,950	30 1,680	5 4,780	
11 3,420	16 3,670	24 1,780	29 3,140	3 5,320	11 1,480	18 1,240	24 1,970	31 1,740	6 4,190	
12 3,230	17 4,160	25 1,800	30 3,230	4 4,560	12 1,420	19 1,360	25 2,010	November	7 4,090	
13 3,220	18 4,450	26 1,800	May	5 4,030	13 1,450	20 1,170	26 2,340	1 1,700	8 4,220	
14 3,240	19 3,530	27 1,750	1 3,270	6 3,950	14 1,500	21 1,760	27 2,200	2 1,670	9 4,070	
15 3,220	20 3,590	28 1,690	2 3,410	7 4,350	15 1,180	22 1,780	28 1,870	3 1,690	10 4,020	
16 3,130	21 4,060	29 1,690	3 3,650	8 4,160	16 1,520	23 1,870	29 1,920	4 1,700	11 4,090	
17 3,200	22 3,850	30 1,680	4 1,770	9 4,310	17 1,660	24 1,690	30 1,820	5 1,690	12 4,010	
18 3,210	23 4,120	31 1,690	5 1,730	10 4,380	18 1,640	25 1,330	October	6 2,610	15 4,070	
19 3,150	24 5,090	April	6 1,730	11 1,700	19 1,400	26 1,200	1 1,820	7 4,340	16 4,240	
20 3,180	25 5,060	1 1,720	7 1,710	12 1,780	20 855	27 1,230	2 1,870	8 4,460	17 4,490	
21 3,120	26 4,240	2 1,670	8 1,700	13 1,650	21 646	28 1,250	3 2,030	9 4,230	18 5,180	
22 3,120	27 4,430	3 1,710	9 1,840	14 1,640	22 1,260	29 1,220	4 2,100	10 4,520	19 4,900	
23 3,150	28 4,060	4 1,750	10 2,130	15 1,630	23 1,340	30 1,190	5 2,060	11 4,150	22 4,090	
24 3,150	March	5 1,740	11 2,900	16 1,620	24 1,250	31 1,260	6 1,080	12 4,260	23 4,140	
25 3,160	1 4,260	6 1,770	12 3,570	17 1,630	26 780	September	7 1,610	13 4,180	24 4,230	
26 3,190	2 3,950	7 1,810	13 3,620	18 1,570	27 1,230	1 1,300	8 1,900	14 4,390	25 4,180	
27 3,200	3 3,750	8 1,870	14 3,620	19 1,570	28 1,650	2 1,370	9 2,000	15 4,460		
28 3,470	4 4,100	9 1,900	15 3,650	20 1,570	29 852	3 1,370	10 1,890	16 5,550		
29 3,250	5 4,810	10 1,810	16 3,790	21 1,630	30 994	4 1,370	11 1,760	17 5,550		
30 3,250	6 5,430	11 1,690	17 3,850	22 1,600	31 1,580	5 1,390	12 1,730	18 5,580		
31 3,230	7 5,680	12 1,700	18 3,850	23 1,600	August	6 1,420	13 1,780	19 5,580		
February	8 5,650	13 1,710	19 3,890	24 1,600	1 1,960	7 1,440	14 1,860	20 5,580		
1 3,170	9 5,050	14 1,720	20 4,240	25 1,600	2 1,690	8 1,460	15 1,700	21 4,920		
2 3,190	10 4,570	15 1,690	21 4,570	26 1,580	3 2,070	9 1,420	16 1,700	22 4,380		
3 3,290	11 5,880	16 1,710	22 4,630	27 1,620	4 2,050	10 1,450	17 1,910	23 4,980		
4 3,300	12 4,370	17 1,690	23 4,150	28 1,530	5 1,970	11 1,440	18 1,670	24 4,130		
5 3,320	13 4,080	18 1,670	24 4,260	29 1,630	6 1,120	12 1,470	19 1,760	25 4,060		
				30 1,780	7 1,880	13 1,480	20 1,720	26 4,130		

Rio Grande at Fort Quitman, Texas

January	February	March	July	September	September	October	October	November	November	December
5 11,530	2 11,880	9 12,870	27 505	27 674	27 684	5 562	2 13,200	23 12,430	7 12,080	
12 11,810	9 11,750	9 13,040	27 676	28 698	5 578	9 13,200	30 12,430	14 12,230	21 11,530	
19 12,250	16 11,610	16 12,870			19 11,830	16 12,600		28 11,530		
26 12,100	25 12,620				26 12,000					

Rio Grande at Upper Presidio Station

January	July	August	August	September	September	October	October	November	November
10 703	20 691	1 536	11 405	26 494	19 443	3 452	14 1,720	1 6,040	7 6,290
July	28 603	2 606	15 397	26 500	26 660	6 620	17 2,860	1 5,910	10 6,290
18 277	28 603	4 601	18 413	September	26 646	6 600	20 3,880	3 6,110	14 6,290
18 277	29 677	4 734	22 812	1 711	29 673	10 541	24 5,180		
20 695	29 683	9 697	25 512	2 699	11 521				

Rio Conchos at Cuchillo Parado, Chihuahua

January	January	February	February	March	March	March	April	April	May
5 1,460	19 1,570	2 1,450	16 1,600	2 1,440	16 1,590	30 2,030	13 2,330	27 2,020	9 1,910
7 1,530	21 1,620	4 1,370	18 1,580	4 1,420	18 1,590	April	15 1,880	30 2,150	11 1,910
10 1,550	24 1,490	7 1,500	21 1,460	7 1,430	26 1,730	4 1,820	18 1,970	May	13 1,960
12 1,560	26 1,500	9 1,500	23 1,490	9 1,400	23 1,660	6 2,090	20 1,820	2 1,930	
14 1,470	28 1,520	11 1,440	25 1,660	11 1,470	25 1,710	8 2,310	22 2,380	4 2,320	
17 1,540	14 1,650	28 1,370	14 1,480	28 1,980	11 2,100	25 2,060	6 1,730		

Rio Conchos near Ojinaga, Chihuahua

January	February	April	May	June	July	August	September	October	December
5 1,590	26 1,440	5 1,620	18 1,810	22 1,700	27 896	17 868	22 910	27 1,160	7 1,260
12 1,430	March	13 1,790	25 1,810	29 768	29 988	24 583	28 885	November	14 1,450
22 1,580	2 1,440	20 1,710	30 1,640	June	29 978	24 576	October	2 1,230	21 1,420
26 1,430	9 1,490	27 1,760		July	29 639	4 634	10 1,230	27 1,470	
February	16 1,600	May	1 1,640	14 1,690	3 1,070	September	8 449	16 1,200	
2 1,250	23 1,680	4 1,700	8 2,090	20 988	3 1,070	7 936	13 532	24 1,420	
9 1,470	30 1,680	10 1,710	16 1,800	20 978	10 738	15 1,210	19 789		

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES 1955

Date	ECx10 ⁶ @25°C												
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Rio Grande at Johnson Ranch, Texas

January	January	March	April	May	June	July	August	September	November
2 1,610	30 1,610	1 1,620	1 1,660	2 877	1 497	5 896	1 526	21 988	14 1,270
4 1,630	February	3 1,590	3 1,680	2 880	1 497	12 1,090	8 686	27 782	21 1,280
6 1,570		6 1,550	5 1,670	3 979	9 1,400	19 545	16 731	October	28 1,450
9 1,520	3 1,530	8 1,490	7 1,680	3 983	9 1,420	19 534	16 756	4 610	December
11 1,580	6 1,360	11 1,560	10 1,670	10 818	14 1,400	20 620	24 638	11 453	5 1,330
13 1,580	8 1,330	13 1,550	19 1,650	10 821	22 737	21 919	25 632	21 896	12 1,310
16 1,560	10 1,570	15 1,560	25 1,660	10 819	22 755	21 1,020	29 483	25 1,050	19 1,510
18 1,590	18 1,540	17 1,590	26 1,660	17 1,090	28 659	22 834	September	November	27 1,470
20 1,680	20 1,520	20 1,630	29 879	17 1,090	28 660	26 733	2 817	1 1,290	
23 1,590	22 1,600	21 1,670	29 981	25 1,240	30 620	2 820	7 1,250		
25 1,580	24 1,620	24 1,630		25 1,230			7 1,000		
27 1,600	27 1,630	27 1,660		30 497			13 979		

Rio Grande at Langtry, Texas

January	February	April	May	June	July	August	September	October	December
4 1,080	21 1,010	4 810	16 415	20 312	22 879	22 601	29 853	27 851	1 1,020
11 1,030	24 1,030	14 734	19 594	23 731	25 894	25 629	October	31 925	5 1,060
14 978	28 998	18 718	23 618	27 736	28 670	29 626	3 787	November	8 1,160
18 987	March	21 710	26 657	30 587	August	September	5 617	3 941	12 1,110
21 1,070	3 1,000	25 702	30 660	31 554	1 886	1 440	6 609	7 1,000	15 1,010
25 1,090	7 1,050	28 690	June	July	4 868	6 851	7 626	10 998	19 1,010
28 1,030	10 1,090	May	2 658	5 419	4 864	8 749	8 631	14 1,080	22 964
February	14 1,060	2 834	6 457	7 583	8 827	12 822	10 752	17 1,040	26 1,080
1 1,080	17 1,020	5 622	6 385	11 765	11 712	15 819	11 747	21 1,030	29 1,100
4 1,090	21 949	9 834	9 475	14 693	15 723	19 358	13 486	24 1,000	
11 1,080	24 900	9 811	13 540	18 673	18 745	22 886	17 539	28 1,020	
14 1,090	28 883	12 458	16 653	21 755	18 743	26 471	20 634		
17 1,050	31 851	16 448	20 312	22 688	22 600	26 468	24 710		

Pecos River near Shumla, Texas

January	February	March	May	June	July	August	September	October	November
7 2,970	17 3,460	30 3,770	5 3,890	9 2,030	19 456	12 2,320	1 1,960	13 2,010	24 2,440
14 3,070	24 3,620	April	12 2,410	16 2,810	19 464	18 2,220	8 2,130	20 2,300	December
21 3,180	March	5 3,670	19 3,040	23 3,000	21 2,120	21 2,100	15 2,360	27 2,550	1 2,450
28 3,230	3 3,600	13 3,560	26 3,250	30 2,870	28 2,050	21 2,030	22 2,410	November	8 2,480
February	10 3,600	21 3,420	June	July	August	25 3,000	29 1,590	3 2,470	15 2,510
4 3,240	16 3,640	28 3,400	2 3,330	7 2,800	2 2,080	31 1,720	October	10 2,390	22 2,540
11 3,380	24 3,780		9 2,050	14 2,690	11 2,320		6 1,770	17 2,390	29 2,630

Pecos River near Mouth

January	February	March	April	June	August	September	October	November	December
4 2,730	9 3,120	14 3,440	18 3,370	27 2,900	21 779	6 1,950	3 1,660	7 2,420	5 2,340
11 2,860	14 3,210	21 3,490	25 3,290	July	21 771	12 2,100	4 1,660	14 2,290	12 2,400
18 2,950	21 3,320	29 3,620	May	5 2,760		19 2,310	17 2,050	21 2,320	19 2,430
25 3,030	28 3,450	April	23 2,890	14 2,690	17 2,750	24 2,340	31 2,480	28 2,350	26 2,450
February	March	6 3,540	30 3,110	18 2,760					
1 3,020	7 3,440	14 3,400							

Upper Devils River

April	May	May	June	June	July	August	September	October	December
19 305	2 311	26 311	6 355	17 321	7 365	4 348	13 360	14 379	8 292
9 311				25 348		26 322	29 364	27 388	

Lower Devils River

May	May	May	June	July	August	September	October	November	December
4 300	24 270	31 303	14 341	5 353	1 292	6 333	3 260	4 369	8 386
16 294	27 268			18 324	20 344	19 353	18 327	16 296	

Rio Grande near Del Rio, Texas

August	August	September	September	October	October	November	December
12 942	26 739	7 698	21 614	3 824	19 659	2 846	2 823
15 888	29 782	9 884	23 1,000	5 794	21 685	4 925	5 853
17 731	31 657	12 699	26 399	7 899	24 737	7 930	7 910
19 759	September	14 793	28 592	10 652	26 799	9 865	9 962
22 678	2 567	16 848	30 732	12 749	28 852	14 946	25 927
24 557	5 864	19 749		14 623	31 884	30 932	14 969
				17 597			30 916

* At a point .8 river mile above the confluence with the Rio Grande and 4.7 river miles below Pecos River near Comstock gauging station.

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

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Date	ECx10 ⁶ @25°C												
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Rio Grande at Maverick Canal at Headgate

January	February	March	April	May	June	July	August	September	October	November
1 1,080	7 1,050	17 1,230	23 1,010	30 958	5 891	11 821	17 847	24 744	29 777	
2 1,110	8 1,200	18 1,220	24 1,070	31 952	6 893	12 787	18 845	25 769	30 985	
3 1,100	9 1,180	19 1,250	25 1,070		7 913	13 492	19 884	26 806		December
4 1,070	10 1,260	20 1,250	26 1,030	1 969	8 939	14 781	20 798	27 841	1 924	
5 1,130	11 1,210	21 1,240	27 1,020	2 963	9 697	15 748	21 581	28 867	2 1,000	
6 990	12 1,230	22 1,270	28 797	3 962	10 737	16 793	22 726	29 865	3 909	
7 1,120	13 1,270	23 1,260	29 1,040	4 1,080	11 708	17 633	23 724	30 915	4 962	
8 1,120	14 1,230	24 1,240	30 1,040	5 716	12 791	18 738	24 394	31 921	5 947	
9 1,130	15 1,230	25 1,220	May	6 976	13 766	19 683	25 368		November	6 1,030
10 1,120	16 1,220	26 1,200	1 1,020	7 641	14 777	20 760	26 308	1 953	7 1,000	
11 1,130	17 1,240	27 1,200	2 1,050	8 1,660	15 859	21 854	27 363	2 950	8 959	
12 1,120	18 1,220	28 1,230	3 1,400	9 1,660	16 852	22 708	28 669	3 884	9 952	
13 1,120	19 1,230	29 1,220	4 893	10 862	17 824	23 484	29 557	4 940	10 969	
14 1,140	20 1,240	30 1,210	5 962	11 721	18 800	24 592	30 667	5 954	11 997	
15 1,150	21 1,210	31 1,200	6 1,080	12 720	19 604	25 528	October	6 991	12 986	
16 1,010	22 1,070	April	7 1,000	13 756	20 616	26 732	1 778	7 974	13 1,030	
17 1,130	23 1,200	1 1,200	8 743	14 1,020	21 415	27 711	2 802	8 964	14 1,090	
18 1,150	24 1,190	2 1,190	9 1,010	15 1,110	22 599	28 871	3 783	9 923	15 998	
19 1,040	25 1,200	3 1,230	10 1,370	16 1,080	23 413	29 784	4 788	10 993	16 962	
20 1,120	26 1,210	4 1,190	11 695	17 1,050	24 648	30 709	5 784	11 967	17 942	
21 1,160	27 1,220	5 1,180	12 579	18 783	25 681	31 650	6 731	12 1,030	18 952	
22 1,170	28 1,230	6 1,100	13 554	19 806	26 921	September	7 753	13 962	19 1,010	
23 1,160	March	7 1,100	14 564	20 719	27 919	1 504	8 637	14 980	20 934	
24 1,160	1 1,220	8 1,140	15 478	21 1,000	28 862	2 517	9 640	15 982	21 971	
25 1,160	2 1,210	9 1,040	16 561	22 565	29 1,030	3 510	10 643	16 1,010	22 958	
26 1,180	3 1,230	10 1,110	17 583	23 587	30 914	4 560	11 601	17 985	23 966	
27 1,180	4 1,230	11 1,110	18 500	24 685	31 779	5 632	12 752	18 998	24 928	
28 1,200	6 1,170	12 1,060	19 546	25 635	August	6 645	13 768	19 1,030	25 962	
29 1,190	7 1,220	13 1,130	20 533	26 788	1 722	7 680	14 644	20 1,030	26 1,020	
30 1,190	8 1,200	14 1,110	21 741	27 994	2 856	8 758	15 570	21 1,030	27 991	
31 1,190	9 2,100	15 1,100	22 1,060	28 1,080	3 758	9 884	16 579	22 1,040	28 991	
February	10 1,170	16 1,120	23 911	29 938	4 832	10 844	17 583	23 1,010	29 1,000	
1 1,110	11 1,230	17 1,100	24 898	30 880	5 846	11 814	18 612	24 1,010	30 1,050	
2 1,200	12 1,200	18 1,110	25 986	July	6 964	12 759	19 646	25 1,030	31 1,050	
3 1,200	13 1,220	19 1,070	26 943	1 915	7 681	13 718	20 665	26 997		
4 1,170	14 1,230	20 1,090	27 932	2 914	8 692	14 816	21 685	27 1,030		
5 1,130	15 1,230	21 1,090	28 983	3 752	9 750	15 822	22 731	28 1,030		
6 1,140	16 1,230	22 1,090	29 880	4 798	10 864	16 825	23 755			

Río San Diego at Jiménez, Coahuila

January	February	March	April	May	June	July	September	October	November	December
1 498	1 506	2 523	3 399	2 345	2 484	3 489	1 412	8 477	16 483	
8 512	9 510	8 476	9 347	9 507	8 413	10 507	9 458	15 474	25 488	
16 521	16 464	18 512	16 477	15 468	17 495	August	16 491	22 477	December	
23 504	23 489	24 450	22 461	21 431	24 509	14 368	24 497	November	2 473	
					21 336	October	1 477	8 498	19 458	

Río San Rodrigo near El Moral, Coahuila

January	February	March	April	May	June	July	September	October	November	December
2 386	2 356	1 345	3 324	1 314	1 289	2 299	2 375	3 339	1 357	
10 780	8 625	9 535	8 664	7 310	August	8 367	11 346	10 500	13 362	
17 351	14 342	16 300	15 260	14 313	15 269	15 401	17 602	17 348	20 344	
24 781	22 893	25 485	24 279	20 320	22 481	24 376	24 329	24 341		

Rio Grande at Eagle Pass, Texas

January	January	February	March	March	April	April	May	May	May	June
1 1,170	26 1,130	11 1,990	1 1,180	19 1,160	6 1,170	25 1,190	12 1,020	30 900	15 860	
3 1,190	26 1,130	12 1,570	2 1,170	21 1,200	7 1,210	26 1,100	13 619	31 911	16 832	
4 1,310	27 1,130	14 2,060	3 1,180	22 1,170	8 1,190	27 1,150	14 621	June	17 1,170	
5 1,340	28 1,160	15 1,190	4 1,190	23 1,100	9 1,160	28 1,160	16 560	2 1,100	18 1,180	
6 1,060	29 1,160	16 1,150	5 1,250	24 1,120	11 1,180	29 994	17 530	3 952	20 1,000	
7 1,080	31 1,170	17 1,190	7 1,150	25 1,130	12 1,180	30 997	18 671	4 970	21 1,010	
8 1,080	February	18 1,200	8 1,150	26 1,100	13 1,180	May	19 596	5 715	22 653	
10 1,080	1 1,190	19 1,200	9 1,160	28 1,120	14 1,170	2 1,150	20 610	6 617	23 668	
11 1,090	2 1,170	21 1,180	10 1,150	29 1,110	15 1,180	3 1,150	21 642	8 614	24 665	
12 1,150	3 1,170	22 1,160	11 1,140	30 1,150	16 1,230	4 976	23 766	9 1,640	25 683	
13 1,130	4 1,140	23 1,150	12 1,150	31 1,160	18 1,140	5 908	24 767	10 1,670	27 701	
14 1,170	5 1,350	24 1,120	14 1,150	April	19 1,160	6 917	25 913	11 1,650	28 820	
15 1,170	7 1,090	25 1,110	15 1,150	1 1,080	20 1,180	7 951	26 988	13 836	29 868	
24 1,120	8 1,120	26 1,110	16 1,160	2 1,160	21 1,180	9 1,020	27 997	14 854	30 1,000	
25 1,120	10 1,890	18 1,130	5 1,150	23 1,150	11 1,070					

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

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Rio Grande at San Antonio Crossing near Villa Guerrero, Coahuila

January	April	May	June	July	August	August	October	November	December
1 1,030	13 1,230	1 1,010	20 1,130	19 577	1 1,110	29 602	3 773	7 941	5 1,010
5 1,000	14 1,180	16 693	22 678	20 564	5 865	September	5 845	14 943	12 1,050
6 1,060	15 1,160	18 569	30 714	21 672	8 946	5 616	6 822	16 964	19 1,010
8 1,060	18 1,180	24 638	July	22 518	11 759	11 880	7 830	17 951	20 1,050
25 1,090	21 1,260	25 738	1 978	25 713	18 888	26 594	17 676	21 1,020	27 1,010
April	25 1,150	June	13 855	29 984	19 818		24 771	22 1,010	
6 1,240	29 1,280	13 594	14 864		22 812		31 840	28 1,020	
8 1,240		13 1,490	18 577		26 749				

Rio Grande at Laredo, Texas

January	February	March	April	May	June	July	August	October	December
1 1,090	4 1,160	10 1,230	13 1,340	17 975	19 952	26 595	29 558	8 778	1 985
2 1,070	5 1,150	11 1,250	14 1,350	18 852	21 965	27 605	30 543	9 758	2 993
3 1,100	6 1,160	12 1,280	15 1,360	19 624	22 966	28 702	31 541	10 658	3 1,000
4 1,100	7 1,160	13 1,290	16 1,370	20 530	23 962	29 677	September	11 647	4 999
5 1,090	8 1,150	14 1,280	17 1,350	21 496	24 1,090	30 794	1 539	12 669	5 992
6 1,100	9 1,170	15 1,280	18 1,350	22 542	25 951	31 975	2 618	13 674	6 992
7 1,110	10 1,140	16 1,290	19 1,370	23 538	26 831	August	3 613	14 664	7 997
8 1,130	11 1,160	17 1,280	20 1,360	24 634	27 846	1 948	4 549	15 656	8 988
9 1,100	12 1,130	18 1,300	21 1,380	25 686	28 954	2 978	5 519	18 648	9 979
10 1,100	13 1,200	19 1,310	22 1,370	26 666	July	3 887	6 564	19 797	10 978
11 1,110	14 1,180	20 1,310	23 1,370	27 613	1 846	4 972	7 588	20 813	11 1,000
12 1,110	15 1,180	21 1,310	24 1,360	28 587	2 1,090	5 754	8 565	22 818	12 992
13 1,120	16 1,180	22 1,310	25 1,370	29 714	3 966	6 821	9 608	25 873	13 1,040
14 1,120	17 1,190	23 1,340	26 1,370	29 1,020	4 745	7 983	10 708	28 921	14 1,040
15 1,120	18 1,180	24 1,330	27 1,380	30 617	5 962	8 826	11 712	31 949	15 1,060
16 1,110	19 1,200	25 1,330	28 1,370	31 629	6 713	9 827	12 642	November	16 1,050
17 1,110	20 1,200	26 1,330	29 1,380	June	7 835	10 895	13 646	1 955	17 1,060
18 1,120	21 1,240	27 1,320	30 1,370	1 713	8 935	11 900	14 756	4 975	18 1,060
19 1,110	22 1,240	28 1,340	May	2 835	9 961	12 637	15 829	5 981	19 1,050
20 1,120	23 1,170	29 1,340	1 1,340	3 883	10 883	13 642	16 834	6 985	20 1,060
21 1,120	24 1,270	30 1,340	2 1,360	4 674	11 680	14 767	17 812	7 965	21 1,060
22 1,120	25 1,210	31 1,330	3 1,310	5 966	12 957	15 763	18 797	12 955	22 1,050
23 1,130	26 1,260	April	4 1,360	6 845	13 965	16 433	19 806	15 965	23 1,050
24 1,110	27 1,240	1 310	5 1,340	7 960	14 965	17 396	20 814	18 955	24 1,050
25 1,120	28 1,220	2 1,350	6 1,320	8 961	15 952	18 528	21 828	20 965	25 1,030
26 1,120	March	3 1,320	7 1,220	9 966	16 966	19 664	22 902	21 965	26 1,030
27 1,130	1 1,250	4 1,350	8 1,230	10 745	17 674	20 665	25 852	22 975	27 1,000
28 1,140	2 1,240	5 1,340	9 1,160	11 712	18 845	21 725	26 829	23 979	28 1,010
29 1,160	3 1,250	6 1,350	10 814	12 571	19 960	22 737	27 509	24 981	29 1,000
30 1,160	4 1,250	7 1,340	11 704	13 957	20 961	23 703	October	25 985	30 1,000
31 1,160	5 1,250	8 1,350	12 864	14 680	21 499	24 674	2 614	26 977	31 991
February	6 1,210	9 1,350	13 893	15 1,010	22 715	25 659	3 600	27 976	
1 1,150	7 1,250	10 1,340	14 940	16 965	23 846	26 547	4 645	28 987	
2 1,150	8 1,220	11 1,360	15 842	17 935	24 566	27 582	5 747	29 972	
3 1,150	9 1,260	12 1,330	16 969	18 961	25 582	28 572	6 837	30 977	

Rio Salado at Las Tortillas, Tamaulipas

May	May	June	July	August	September	September	September	October	December
12 1,620	17 640	1 612	21 1,380	13 479	1 631	9 864	20 428	8 1,070	11 3,150
12 3,610	18 589	7 572	August	14 500	2 452	10 975	25 929	15 566	18 2,990
14 689	21 455	8 516	2 1,360	15 448	3 388	13 491	30 1,290	November	25 3,030
15 685	30 534	9 483	3 399	17 404	5 913			11 1,100	
	31 552		12 542	18 351				29 4,020	

Rio Grande at Chapeño, Texas

January	February	March	April	May	June	July	July	August	October	November
3 634	7 660	14 745	15 725	16 768	17 823	20 852	22 852	24 832	17 701	25 701
5 637	9 657	16 740	18 732	18 775	20 842	22 852	24 834	26 824	19 700	28 701
7 634	11 656	18 735	20 738	20 771	22 836	25 856	26 841	29 819	21 694	30 701
10 630	14 661	21 730	22 737	23 784	24 834	27 861	29 819	31 807	24 693	December
12 634	16 659	23 732	25 738	25 802	27 836	29 756	31 834	August	28 698	2 704
17 636	18 672	25 735	27 753	31 811	29 834	31 807	31 695	8 705		
19 638	21 656	28 711	29 751	June	5 849	3 863	9 821	November	12 706	
24 641	23 669	30 722	May	2 819	6 844	5 862	14 801	2 702	16 708	
26 640	28 682	April	2 767	3 814	6 844	5 862	14 801	2 702	16 708	
28 639	March	1 722	4 767	6 799	8 850	8 860	23 730	4 713	19 708	
31 641	2 683	4 722	6 763	8 816	11 857	10 859	25 691	7 698	21 709	
February	4 699	7 709	9 770	10 819	13 844	15 847	October	10 697	23 709	
2 618	7 689	8 719	13 760	13 823	15 851	17 851	3 689	14 700	26 711	
4 661	11 710	13 721	13 761	15 828	18 854	19 846	7 683	16 693	28 713	

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Rio Grande at Roma, Texas

January	February	March	April	May	June	July	August	September	October	November	December
6 648	26 643	3 670	23 671	9 710	31 745	14 728	4 786	28 803	8 823		
12 650		9 655	March	16 739	April	20 742	11 770	June	15 782		
19 639		16 668	2 697	23 741	6 734	27 747	19 790	1	29 845		

Rio Grande at Mercedes, Texas, Pumps

January	February	March	April	May	June	July	August	September	October	November	December
1 920	7 904	16 1,630	22 992	29 1,080	4 1,160	10 1,650	16 1,193	23 1,830	29 1,220		
2 908	8 918	17 1,520	23 1,050	30 1,060	5 2,120	11 1,560	17 1,210	24 1,700	30 1,260		
3 929	9 918	18 1,420	24 1,050	31 1,060	6 1,300	12 1,490	18 1,740	25 1,470		December	
4 958	10 918	19 1,410	25 1,060	June	7 1,340	13 1,410	19 1,740	26 1,340	1 1,090		
5 924	11 930	20 1,320	26 1,030	1 1,070	8 1,320	14 1,370	20 1,290	27 1,080	2 959		
6 858	12 926	21 1,350	27 1,020	2 1,090	9 1,290	15 1,430	21 976	28 1,030	3 964		
7 767	13 951	22 1,330	28 1,030	3 1,130	10 1,330	16 1,490	22 791	29 1,020	4 1,050		
8 754	14 939	23 1,290	29 1,030	4 1,200	11 1,380	17 1,500	23 831	30 1,020	5 1,020		
9 751	15 941	24 1,180	30 1,030	5 2,120	12 1,440	18 1,330	24 997	31 1,070	6 1,050		
10 770	16 940	25 1,100	May	6 1,190	13 1,550	19 1,090	25 1,020	November	7 1,080		
11 747	17 973	26 1,130	1 1,060	7 1,160	14 1,640	20 961	26 1,030	1 1,180	8 1,090		
12 756	18 969	27 1,110	2 1,050	8 1,160	15 1,680	21 1,050	27 1,390	2 1,160	9 1,270		
13 741	19 997	28 1,110	3 1,020	9 1,140	16 1,750	22 1,000	28 825	3 1,020	10 1,790		
14 740	20 1,030	29 1,040	4 984	10 1,110	17 1,820	23 1,010	29 839	4 976	11 1,790		
15 766	21 1,030	30 996	5 1,000	11 1,080	18 1,770	24 1,080	30 883	5 976	12 1,800		
16 752	22 1,030	31 983	6 998	12 1,100	19 1,750	25 1,110	October	6 936	13 1,220		
17 743	23 1,010	April	7 993	13 1,080	20 1,940	26 1,120	1 966	7 906	14 1,230		
18 755	24 1,070	1 991	8 993	14 1,030	21 2,220	27 1,050	2 796	8 925	15 1,340		
19 750	25 1,090	2 1,010	9 992	15 1,030	22 2,140	28 1,060	3 969	9 925	16 1,380		
20 776	26 1,140	3 993	10 946	16 1,040	23 2,110	29 1,030	4 934	10 911	17 1,396		
21 752	27 1,280	4 902	11 952	17 1,040	24 2,190	30 984	5 1,150	11 901	18 1,210		
22 751	28 1,280	5 885	12 946	18 1,030	25 2,030	31 991	6 3,560	12 921	19 1,150		
23 752	March	6 901	13 930	19 1,040	26 2,020	September	7 1,440	13 942	20 1,460		
24 771	1 1,330	7 883	14 912	20 1,040	27 2,030	1 990	8 1,140	14 996	21 1,350		
25 796	2 1,390	8 892	15 1,010	21 1,040	28 1,940	2 995	9 1,090	15 1,040	22 897		
26 794	3 1,290	9 881	16 874	22 1,060	29 2,060	3 980	10 1,080	16 1,350	23 832		
27 785	4 1,240	10 877	17 875	23 1,030	30 2,070	4 1,000	11 1,010	17 1,380	24 837		
28 813	5 1,240	11 884	18 923	24 1,050	31 2,120	5 754	12 1,330	18 1,150	25 849		
29 847	6 1,250	12 881	19 935	25 1,040	August	6 638	13 1,800	19 1,110	26 860		
30 823	7 1,260	13 918	20 934	26 1,030	1 2,220	7 642	14 1,270	20 1,100	27 850		
31 867	8 1,340	14 956	21 976	27 1,050	2 2,870	8 763	15 1,250	21 1,100	28 813		
February	9 1,350	15 1,250	22 957	28 1,030	3 2,980	9 772	16 1,220	22 1,090	29 808		
1 852	10 1,390	16 941	23 962	29 1,060	4 1,990	10 917	17 1,190	23 1,120	30 803		
2 849	11 1,380	17 943	24 956	30 1,060	5 1,670	11 935	18 1,210	24 1,390	31 810		
3 878	12 1,410	18 946	25 968	July	6 1,660	12 993	19 1,150	25 1,400			
4 858	13 1,420	19 971	26 968	1 1,050	7 1,670	13 1,020	20 1,180	26 1,200			
5 881	14 1,390	20 975	27 1,030	2 1,090	8 1,730	14 1,000	21 1,300	27 1,240			
6 909	15 1,570	21 979	28 1,070	3 1,130	9 1,780	15 1,090	22 1,290	28 1,290			

Rio Grande near San Benito, Texas

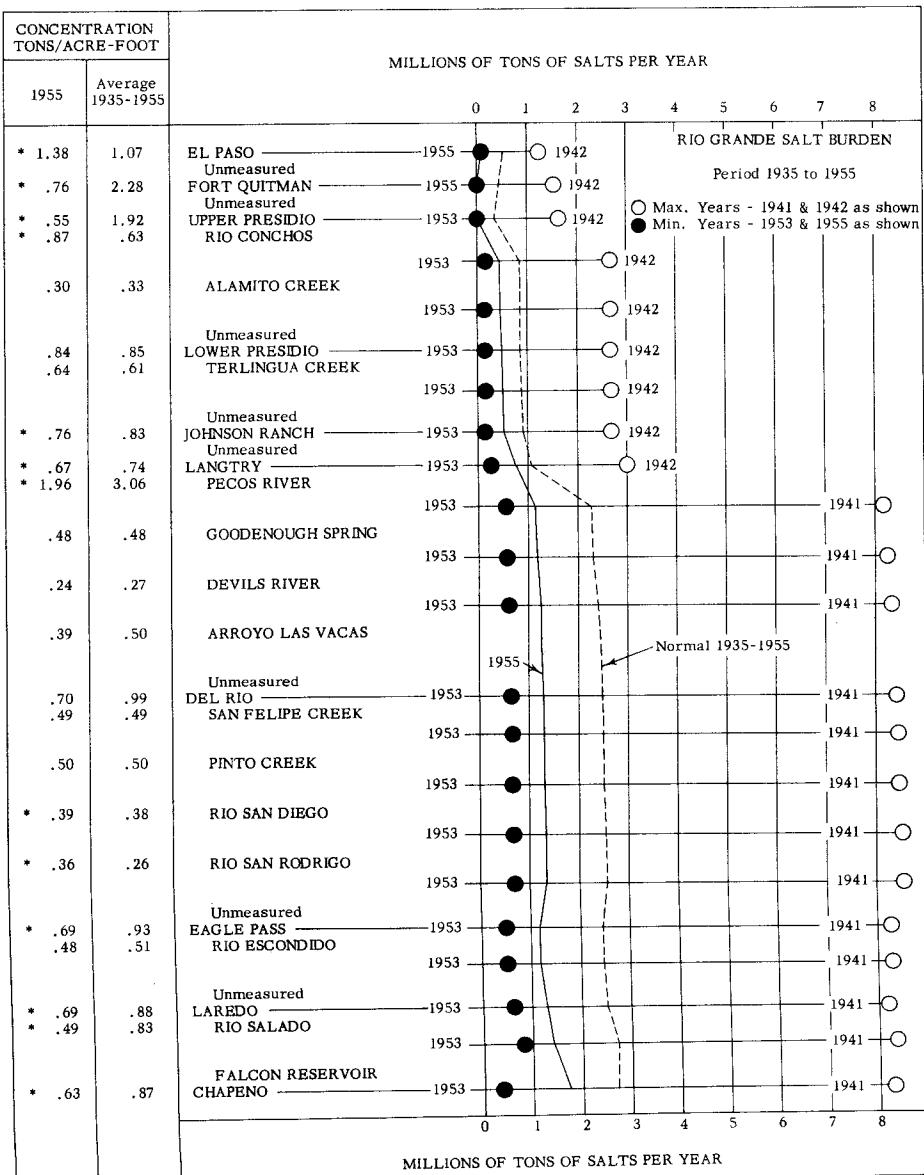
April	May	June	July	August	September	October	November	December
4 924	2 1,070	6 1,150	5 1,160	1 2,100	6 764	3 1,030	31 1,070	21 1,170
11 885	9 991	13 1,120	11 1,350	8 1,670	20 1,560	13 1,400	November	28 1,260
18 922	16 893	20 1,040	18 1,760	15 1,410	26 1,060	17 1,310	7 934	19 1,270
25 1,070	23 962	27 1,070	25 2,160	22 1,030	24 1,350	**4 1,010	5 1,060	27 950
	31 1,080			29 1,280				

Rio Grande at Lower Brownsville, Texas

April	May	June	July	August	September	October	November	December
5 1,380	2 1,110	6 1,280	5 1,140	1 2,030	6 1,250	3 1,770	31 1,660	21 1,250
11 908	9 1,100	13 1,330	11 1,270	8 2,160	20 1,080	13 1,870	November	28 1,850
18 1,040	16 966	20 1,100	18 1,660	15 1,800	26 1,590	17 1,500	7 1,480	19 1,750
25 1,140	23 950	27 1,060	25 1,790	22 1,210	24 1,820	14 948		27 1,120
	31 1,060			29 1,330				

RIO GRANDE SALT BURDEN

The term "salt", as used herein, means total dissolved solids. The 1955 concentrations which are marked by an asterisk (*) are based on the chemical analyses shown on preceding pages of this bulletin. Those without asterisks are based on chemical analyses reported in previous water bulletins or have been developed by deduction. Average concentrations shown for the period 1935 to 1955 are the weighted means of the values determined for the 21-year period indicated.



* Based on 1955 Chemical Analyses

SANITARY ASPECTS OF WATER QUALITY

The United States and Mexican Sections of this Commission and the Texas State Department of Health co-operate in the joint sanitary water-sampling program along the Rio Grande. All analyses below have been made under the "Rules of Laboratory Procedure," as approved by the participating agencies, and which conform with the procedures set out in the manual "Standard Methods for the Examination of Water and Sewage," Ninth Edition (1946), prepared by the American Public Health Association and the American Water Works Association. These analyses were made in the laboratories of the El Paso Water Plant, the Cameron County Health Unit, and the International Boundary and Water Commission. The percentages of dissolved oxygen (D.O.) shown below are the per cent saturation at the elevation of the sampling station.

Date 1955	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1955	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)
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Rio Grande at El Paso, Texas, Water Plant

Jan. 4	114	2.6	6,200	24,000	Mar. 1	157	3.0	360	32,000
11	134	2.8	1,600	4,900	8	187	3.2	2,300	6,900
18	115	2.5	6,200	2,800	15	149	3.7	3,600	18,200
25	127	2.3	6,200	2,200	22	150	4.5	3,600	19,600
Feb. 1	120	2.9	24,000	9,000	Nov. 8	97.5	3.4	24,000	62,600
8	133	2.9	360	1,800					
15	157	3.8	2,300	23,800	Total	1,772.5	40.9	80,950	210,700
21	132	3.3	230	2,900	Average	136	3.1	6,230	16,200

Franklin Canal at El Paso, Texas, Water Plant

Mar. 29	96.1	6.0	2,300	37,600	Aug. 2	103.5		3,600	23,500
Apr. 5	101	4.6	11,000	22,500	9	78.4	3.0	70,000	83,000
12	106	4.5	38,000	8,800	16	91.6	1.0	16,000	110,000
19	103		23,000	327,500	23	82.5	2.5	240,000	790,000
25	95.1	6.1	11,000	2,900	30	85.3	4.3	380,000	140,000
May 3	105	2.1	6,200	86,400	Sept. 6	84.7	2.7	240,000	75,000
10	99.3	3.2	70,000	21,000	13	85.1	3.9	380,000	50,000
17	155	2.9	3,600	4,000	20	92.6	4.0	23,000	40,000
24	149		3,600	15,500	27	82.8	2.8	23,000	30,000
31	136	6.3	3,600	16,400	Oct. 4	77.3	3.4	62,000	80,000
June 7	126	4.4	11,000	23,200	11	95.0	.7	2,300	5,500
14	105	5.4	240,000	37,150	18	91.5	.3	9,400	7,000
21	110	3.6	24,000	11,000	25	95.2	.6	3,600	8,000
28	84.9	3.9	240,000	67,000	Nov. 1	95.3	.7	3,600	27,000
July 5	92.4	4.1	36,000	16,100					
12	65.3	4.7	140,000	71,600	Total	3,138.6	97.5	2,589,800	2,375,650
19	86.5	2.1	110,000	38,000	Average	98.1	3.4	80,900	74,200

Rio Grande at Ysleta, Texas-Zaragoza, Chih. Bridge

Jan. 4	0	96.3	70,000,000	3,480,000	July 19	0	33.9	94,000,000	9,300,000
11	38.5	121.5	3,600,000	3,110,000	26	44.8	11.2	2,300,000	1,100,000
18	31.5	111.9	3,600,000	2,485,000	Aug. 2	0		38,000,000	15,000,000
25	16.0	135.1	6,200,000	3,200,000	9	0	32.0	36,000,000	10,500,000
Feb. 1	41.6	114.7	11,000,000	2,620,000	16	0	38.9	36,000,000	15,200,000
8	42.1	139.2	3,600,000	1,610,000	23	0	29.0	94,000,000	20,000,000
15	6.0	142.0	38,000,000	3,150,000	30	0	40.0	240,000,000	13,000,000
21	17.8	145.5	70,000,000	2,660,000	Sept. 6	0	32.0	36,000,000	14,000,000
Mar. 1	0	146.0	36,000,000	3,430,000	13	62.4	11.6	3,600,000	980,000
8	0	128.3	23,000,000	3,050,000	20	0	37.0	36,000,000	1,000,000
15	0	150.0	23,000,000	3,640,000	27	0	37.0	36,000,000	1,750,000
22	0	122.9	23,000,000	3,790,000	11	0	42.0	62,000,000	9,600,000
29	56.3	15.3	6,200,000	680,000	Oct. 4	0	41.0	23,000,000	7,300,000
Apr. 5	0	133.8	240,000,000	4,720,000	18	0	115.0	36,000,000	6,100,000
12	0	157.0	62,000,000	4,260,000	25	0	76.0	36,000,000	8,600,000
19	34.6		3,600,000	3,910,000	Nov. 1	0	57.0	240,000,000	5,300,000
25	0	138.0	23,000,000	6,120,000	8	0	78.0	23,000,000	9,000,000
May 3	0	133.8	23,000,000	3,930,000	15	0	55.0	62,000,000	9,000,000
10	0	88.7	23,000,000	2,930,000	22	0	56.0	55,000,000	8,400,000
17	0	91.5	3,600,000	3,090,000	29	0	62.0	62,000,000	6,800,000
24	0		3,600,000	5,000,000	Dec. 6	0	61.0	36,000,000	8,100,000
31	0	103.7	24,000,000	8,000,000	13	0	51.0	55,000,000	6,000,000
June 7	0	92.0	36,000,000	9,730,000	20	0	78.0	62,000,000	8,100,000
14	63.6	13.1	24,000,000	3,700,000	27	0	74.0	23,000,000	7,800,000
21	57.8	41.0	23,000,000	10,800,000					
28	0	43.1	55,000,000	16,200,000	Total	513.0	3,850.6	2,450,900,000	347,025,000
July 5	0	50.6	23,000,000	14,900,000	Average	9.9	78.6	47,100,000	6,670,000
12	0	47.0	140,000,000	10,900,000					

SANITARY ASPECTS OF WATER QUALITY

Date 1955	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1955	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1955	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)
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Rio Grande at Laredo, Texas, Water Plant

Jan. 3	360	71	May 16	3,600	1,400	Sept. 26	240,000	106,000
10	620	450	23	2,300	950	Oct. 3	9,400	54,400
17	230	850	31	620	700	10	5,000	87,000
24	360	145	June 6	38,000	5,600	17	6,200	30,000
31	230	75	13	620	500	24	3,600	6,000
Feb. 7	230	350	20	110	100	31	110	1,300
14	62	120	27	360	80	Nov. 7	160	780
21	230	130	July 5	3,800	480	14	360	2,950
28	160	70	11	2,300	245	21	230	1,800
Mar. 7	360	75	18	2,300	850	28	160	1,400
14	360	70	25	36,000	6,250	Dec. 5	620	630
21	620	75	Aug. 1	1,100	2,650	12	23	145
28	26	95	8	3,600	1,740	20	36	160
Apr. 4	23	80	15	110,000	5,700	27	160	120
11	360	125	22	6,200	1,650			
18	620	425	29	16,000	3,100			
25	160	130	Sept. 6	6,200	1,600			
May 2	620	70	12	2,300	1,250			
9	620	800	19	16,000	5,000	Total	523,720	336,736
						Average	10,100	6,480

Rio Grande at 8.6 Miles Below Laredo, Texas, R. R. Bridge

Jan. 10	16,000	4,500	May 16	110,000	15,500	Sept. 26	110,000	96,000
17	11,000	8,500	23	240,000	8,500	Oct. 3	36,000	76,650
24	23,000	1,050	31	23,000	3,000	10	23,000	73,000
31	62,000	1,700	June 6	240,000	48,000	17	62,000	31,500
Feb. 7	36,000	3,500	13	160,000	4,000	24	16,000	14,600
14	62,000	1,450	20	110,000	6,500	Nov. 7	23,000	10,700
21	62,000	1,350	27	23,000	900	14	23,000	8,250
28	110,000	1,700	July 5	62,000	2,300	21	110,000	14,000
Mar. 7	110,000	1,950	11	240,000	7,000	28	62,000	9,100
14	36,000	1,200	18	94,000	1,800	Dec. 5	28,000	9,250
22	280,000	2,000	25	230,000	6,000	12	110,000	10,600
28	62,000	Aug. 1	4,100	5,000	8,000	20	36,000	8,600
Apr. 4	36,000	1,500	8	6,200	9,300	27	110,000	3,250
11	62,000	2,600	15	11,000	1,200			
18	380,000	2,600	22	23,000	2,650	Total	4,350,600	539,100
25	36,000	750	29	62,000	1,850	Average	88,800	11,200
May 2	220,000	900	Sept. 12	62,000	1,900			
9	110,000	2,750	19	240,000				

Rio Grande at Chapeño, Texas

Jan. 3	54	67.5	May 9	620	1,560	Sept. 12	38,000	4,160
10	360	450	17	93	450	19	360	1,550
17	620	550	23	210	500	26	2,100	1,650
24	360	145	31	360	100	Oct. 3	540	1,000
31	360	95	June 6	160	550	10	360	1,260
Feb. 7	930	300	13	110	110	17	620	570
14	16	85	20	1,600	140	24	110	935
21	62	60	27	210	115	31	360	2,410
28	36	75	July 5	230	75	Nov. 14	2,300	750
Mar. 7	360	75	11	1,100	115	21	600	350
14	110	60	18	360	160	28	620	550
21	160	65	25	3,600	450	Dec. 5	620	150
28	62	100	Aug. 1	930	80	12	36	1,250
Apr. 4	2,400	330	8	13	80	20	16	175
11	940	105	15	1,100	160	27	23	
18	620	100	22	620	150	Total	78,891	24,912.5
25	3,800	70	29	360	105	Average	1,550	498
May 2	7,000	370	Sept. 6	2,300	150			

Rio Grande at Mercedes, Texas, Pumps

Jan. 3	3,600		May 16	6,200		Sept. 26		620
10	6,200		23	3,600		Oct. 3		3,600
17	2,300		31	2,300		11		3,600
24	24,000		June 6	2,300		17		6,200
31	16,000		13	1,600		24		6,200
Feb. 7	70,000		20	3,600		31		11,000
14	2,300		27	3,600		Nov. 7		2,300
23	1,100		5	6,200		14		3,600
28	2,300		11	6,200		21		3,600
Mar. 7	3,600		18	3,600		28		3,600
14	16,000		25	1,600		Dec. 5		2,100
21	3,600		1	3,600		12		2,300
28	1,100		8	2,300		19		9,400
Apr. 4	2,300		15	3,600		27		3,600
11	1,100		22	2,300				
18	2,300		29	23,000				
25	36,000		Sept. 6	38,000		Total		379,720
May 2	3,600		13	1,100		Average		7,300
9	2,300		20	3,600				

**RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In the United States**

The monthly records for United States rainfall stations, with averages for their periods of record, are tabulated below in their downstream order. The numerals above the station names are used to identify these stations indicated on the map, pages 50 and 51. These records have not been published elsewhere. On pages 91 and 92, these same stations are listed in alphabetical order, showing the location, elevation, period of record, type of gage in use, tributary or subdivision of the Rio Grande watershed on which the station is located, and the observer. Records of daily rainfall amounts for 1953, prior to 1953, see previous issues of these bulletins.

Month	1		2		3		4		5	
	American Dam		Island Station		Fabens-Guadalupe Bridge		County Line		Fort Hancock Bridge	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.42	.44	.28	.33	.20	.37	.24	.41	.19	.43
Feb.	T	.36	0	.25	0	.27	0	.20	0	.25
Mar.	.06	.34	0	.25	T	.29	0	.29	T	.23
Apr.	0	.28	0	.23	0	.33	0	.32	0	.41
May	.30	.30	.05	.45	.05	.43	.02	.38	.22	.68
June	.13	.76	.05	.51	0	.55	.06	.56	.20	.88
July	3.74	1.58	1.99	1.06	3.12	1.23	1.99	1.12	2.67	1.30
Aug.	.87	1.23	.85	1.22	1.67	1.48	1.76	1.43	1.67	1.40
Sept.	.05	.81	.11	.87	.16	1.00	2.05	1.08	.52	.99
Oct.	.98	.67	.94	.84	1.53	1.05	1.41	.89	2.27	1.08
Nov.	.14	.19	.15	.22	.15	.21	.13	.22	0	.19
Dec.	0	.41	0	.40	0	.45	0	.40	T	.47
Yearly	6.69	7.37	4.42	6.63	6.88	7.66	7.66	7.30	7.74	8.31

Month	6		7		8		9		10	
	Madden Arroyo		Guayuco Arroyo		Fort Quitman		Neely Ranch		Al Roosevelt Ranch	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	0	.33	.19	.37	.32	.47	.09	.38	1.35	.45
Feb.	0	.12	0	.13	0	.20	0	.11	0	.13
Mar.	0	.14	0	.15	0	.23	0	.16	0	.29
Apr.	0	.37	0	.25	0	.31	0	.14	.45	.42
May	.34	.51	0	.41	.02	.45	T	.45	0	.22
June	.04	.58	.08	.55	.29	.77	.19	.69	.10	.71
July	2.06	1.27	2.74	1.66	3.28	1.55	2.67	1.61	2.40	2.33
Aug.	1.28	1.67	.73	1.52	1.49	1.35	2.15	1.53	1.55	.82
Sept.	.91	.99	1.14	1.24	.39	.97	1.47	1.43	4.30	1.35
Oct.	1.57	1.22	2.18	1.23	1.69	.83	2.68	1.08	2.35	1.20
Nov.	0	.14	0	.15	0	.22	0	.13	.15	.05
Dec.	0	.42	0	.42	0	.37	0	.39	T	.38
Yearly	6.20	7.76	7.06	8.08	7.48	7.72	9.25	8.10	12.65	8.35

Month	11		12		13		14		15	
	Quebec Ranch		Kelly Ranch		Petan Ranch		Livingston Ranch		Presidio (B&WC Gage)	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	1.05	.42	1.10	.73	1.55	.54	1.16	.35	.37	.20
Feb.	0	.07	0	.05	0	.09	0	0	0	.08
Mar.	0	.28	0	.41	0	.36	0	.09	0	.22
Apr.	0	.51	0	.49	.20	.25	.36	.18	.34	.25
May	1.85	1.27	2.05	1.08	.90	.92	.40	.57	.31	.34
June	0	1.74	.15	1.54	1.10	2.41	.25	1.60	.93	1.10
July	4.00	2.03	3.80	3.41	2.51	3.64	3.84	1.44	1.62	1.59
Aug.	2.05	1.65	.25	1.17	3.85	2.54	2.60	1.64	.90	.75
Sept.	3.10	1.57	2.35	2.07	1.56	1.87	2.10	.93	1.56	.70
Oct.	2.15	.75	1.20	.60	3.00	.81	1.20	1.69	.41	.37
Nov.	0	.04	0	.06	.60	.29	0	.31	.30	.13
Dec.	0	.19	0	.30	.05	.29	0	.25	0	.18
Yearly	14.20	10.52	10.90	11.91	15.32	14.01	11.91	9.05	6.74	5.91

**RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES**
In the United States

Month	16		17		18		19		20	
	Bloys Camp		Marfa Experiment Station		Kerr Mitchell Ranch		Joe Lane Ranch		Loma Vista Ranch	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	1.25	.60	1.23	.47	1.15	.58	.61	.25	.75	.87
Feb.	0	.38	.02	.14	T	.08	0	0	0	.11
Mar.	0	.44	0	.35	0	.18	0	0	0	.16
Apr.	.40	.61	.08	.44	0	.64	.10	.33	.75	.85
May	1.90	1.70	.46	.85	.46	1.02	1.11	.50	0	.98
June	.90	2.65	1.14	1.64	1.42	1.85	.85	1.25	1.48	1.92
July	4.60	3.21	3.07	2.33	1.60	2.04	4.67	2.57	5.11	2.41
Aug.	3.55	3.52	1.74	1.52	.75	2.05	1.73	3.56	.93	1.57
Sept.	2.20	2.78	2.40	1.47	1.44	1.71	.95	.38	.69	1.70
Oct.	2.50	1.58	1.57	.54	1.59	1.27	.50	.20	.68	1.18
Nov.	0	.35	.26	.04	.28	.21	.15	.05	.24	.32
Dec.	.30	.59	T	.19	0	.45	0	.05	0	.56
Yearly	17.60	18.41	11.97	9.98	8.69	12.08	10.67	9.14	10.63	12.63

Month	21		22		23					
	H. T. Fletcher Ranch		Sauz Ranch		McFarland Ranch					
	1955	Average	1955	Average	1955	1955	1955	Average	1955	
Jan.	1.25	.86	1.10	.64	2.41	2.25	2.19	.99	2.20	2.12
Feb.	0	.12	0	.09	0	0	0	.17	0	0
Mar.	0	.30	0	.42	0	0	0	.36	0	0
Apr.	.10	.56	.05	.30	T	T	.14	.66	.50	.10
May	.68	1.16	.36	1.15	.55	.50	.55	1.38	.65	.45
June	1.00	1.47		1.24	2.48	2.65	1.67	1.14	1.10	2.75
July	4.37	2.77		2.74	6.00	5.58	7.82	3.43	4.25	5.27
Aug.	.88	2.96		2.38	2.55	2.95	2.35	2.55	2.75	2.83
Sept.	2.07	1.56		1.92	4.86	4.22	3.53	2.17	2.87	4.84
Oct.	2.19	1.38		1.37	2.10	1.75	1.80	1.38	1.80	3.35
Nov.	.42	.31		.30	.80	.80	.87	.43	.80	.80
Dec.	T	.37		.49	0	0	0	.59	0	0
Yearly	12.96	13.82		13.04	21.75	20.70	20.92	15.25	16.92	22.51

Month	23		24		25		26		27	
	McFarland Ranch		N. B. Chaffin Ranch		A. L. Baugh Ranch		San Jacinto Ranch		McCracken Ranch	
	Cane Pasture	Punta el Agua	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	2.14	2.19	.60	.50	.56	.65	.60	.74	.75	.62
Feb.	0	0	0	.16	0	.06	0	.08	0	.11
Mar.	0	0	0	.32	0	.25	0	1.40	0	.18
Apr.	.50	.50	.25	.46	.22	.33	.48	.16	.30	.56
May	.80	.70	.23	.64	.47	.76	.63	.21	.41	.78
June	1.62	1.05	1.40	1.45	.83	1.27	.98	1.33	.85	1.32
July	3.88	2.49	.55	1.44	1.31	1.85	1.97	1.31	1.24	2.33
Aug.	2.11	2.10	.95	1.35	1.79	1.76	.45	3.67	1.33	2.12
Sept.	3.52	2.82	2.10	1.79	2.07	1.38	3.10	1.69	2.19	1.81
Oct.	1.60	1.60	.50	.17	.88	.84	1.00	.33	1.15	1.20
Nov.	.75	.75	0	.23	.23	.28	0	0	.46	.30
Dec.	0	0	0	.47	0	.52	0	0	0	.51
Yearly	16.92	14.20	6.58	8.98	8.36	9.95	9.21	10.92	8.68	11.84

Month	28		29		30		31		32	
	H. M. Greenwood (Cienega Ranch)		Redford		Mariposa Mine		Van Eman Ranch		02 Ranch	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.63	.56	.25		.22	.09	1.08	.46	.40	.53
Feb.	0	.09	0		.01	.45	0	.06	0	.34
Mar.	0	.19	0		0	.24	0	.38	0	.44
Apr.	.27	.72	0		.97	.67	.43	.35	0	.40
May	.33	.82	.20		.52	.33	.81	.55	.45	1.09
June	.87	1.68	.40		.01	.51	1.25	1.49	2.44	1.35
July	1.16	1.87	0	.10	.57	.91	.98	2.09	2.92	1.70
Aug.	.94	1.88	2.05	1.68		.49	1.89	1.74	1.57	2.78
Sept.	2.21	2.27	3.00	1.50		.85	1.82	1.42	1.95	1.85
Oct.	.77	1.19	.20	.10		.22	1.02	.42	.26	1.76
Nov.	.36	.26	.25	.13		0	.57	.30	0	.73
Dec.	0	.56	0	0		.13	0	.49	0	.38
Yearly	7.54	12.09	6.35				4.89	9.85	9.75	9.99

* Formerly McFarland Ranch

**RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES**
In the United States

Month	33		34		35		36		37	
	Maverick Ranger Station		Terlingua Creek Station		Johnson Ranch		Panther Junction		Ray Willoughby Ranch	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	Record began Feb. 1		.21	.13	.03	.43	.28	.26	1.55	.51
Feb.	0	0	0	0	.11	T	T	0	0	.06
Mar.	0	0	.24	0	.19	0	0	0	0	.38
Apr.			.50	.92	1.12	.58	.33	.92	0	.71
May	.93		1.38	.49	1.32	.92	1.10	.96	.70	1.08
June	.54		.93	1.00	2.06	1.24	.54	1.23	1.70	1.61
July	1.96		.83	.95	.72	1.27	.50	1.31	3.07	3.38
Aug.	1.02		1.04	.78	1.81	.89	1.92	2.05	4.25	3.16
Sept.	1.79		.73	.44	.69	1.31	1.56	.82	3.05	1.35
Oct.	.06		0	.20	0	.57	T	.13	.80	.25
Nov.	.15		.25	.10	.20	.21	.53	.18	.60	.15
Dec.	0		0	.24	.01	.32	.11	.10	T	.12
Yearly			5.87	5.49	7.96	8.04	6.87	7.96	15.72	12.76

Month	38		39		40		41		42	
	J. F. Woodward Ranch		Buttrill Ranch		Santiago Peak Ranch		Kokernot Ranch - Headquarters		Kokernot Ranch - No. 2	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	1.10	.55	.05	.13	1.00	.50	.37	.22	.42	.33
Feb.	0	0	0	.04	0	0	0	0	0	.03
Mar.	0	0	.14	0	.02	0	.18	0	0	.28
Apr.	.35	1.45	.25	.85	.20	.73	.20	.70	.40	.62
May	2.00	1.38	1.50	1.23	2.00	.87	.70	.34	.65	.42
June	1.80	1.42	.11	.51	1.90	1.83	.28	.86	.20	.91
July	2.10	1.22	3.44	1.49	.80	.57	1.03	1.28	1.80	1.67
Aug.	4.20	3.62	.07	.16	1.50	2.73	.85	1.25	1.75	1.65
Sept.	3.30	1.75	1.16	.44	2.80	.93	1.55	.60	.70	1.72
Oct.	.45	.42	.06	.19	1.80	.60	.65	.21	.60	.53
Nov.	.35	.18	0	.43	.36	.12	.40	.28	.40	.16
Dec.	.10	.05	T	T	T	0	.15	0	0	.24
Yearly	15.75	12.04	6.64	5.61	12.36	8.90	6.03	6.07	6.92	8.56

Month	43		44		45		46		47	
	A. M. Potter Ranch		Black Gap Game Refuge		Sand Valley Ranch		Persimmon Gap Ranger Station		Adobes Ranch	
	1955	Average	1955	Average	1955	Average	1955	Average	1950	1951
Jan.	0	.12	.33	.22	.80	.35	.56	.27	0	0
Feb.	0	.01	0	.01	0	.12	0	.02	.20	0
Mar.	0	.01	0	.28	0	.49	0	.21	0	1.13
Apr.	.30	.42	1.00	.59	.21	.31	.22	.74	.45	0
May	1.10	.73	.75	1.11	1.10	.84	.23	.64	.10	0
June	1.80	.82	.75	.54	1.80	1.43	.48	1.32	.75	.41
July	2.50	1.19	.25	.45	1.65	1.71	2.09	1.21	5.30	1.45
Aug.	1.60	.56	.86	.63	1.70	.57	.58	.62	.40	.20
Sept.	1.00	1.20	3.60	.94	1.45	1.15	1.58	.56	5.10	1.70
Oct.	0	.05	.01	0	0	.11	T	.16	0	.20
Nov.	.10	.70	.28	.65	.30	.30	.53	.16	0	0
Dec.	.10	0	.34	0	.35	0	.15	0	.30	
Yearly		5.26	8.29	5.40	9.36	7.73	6.27	6.06	12.30	5.39

Month	48					49					50	
	Adobes Ranch					Dove Mountain Ranch					Maravillas	
	1952	1953	1954	1955	Average	1955	Average	1955	Average	1955	Haymond	
Jan.	.20	0	.30	.85	.22	1.23	.62	.12	.12	.84		
Feb.	0	.10	0	0	.05	0	.13	0	.04	0		
Mar.	0	.25	0	0	.23	0	.22	0	.32	0		
Apr.	.30	0	.55	.18	.25	.20	.52	.20	.91	.62		
May	.10	.10	1.02	.36	.28	.45	.58	.33	.83	1.32		
June	1.35	0	4.20	1.10	1.30	1.13	.95	3.14	1.80	4.18		
July	2.30	3.01	.35	3.30	2.62	.91	.72	1.38	.93	1.90		
Aug.	.10	.65	1.77	2.53	.94	.93	.40	3.98	1.91	.74		
Sept.	0	.10	0	3.60	1.75	3.52	.88	.62	.74	3.85		
Oct.	0	0	1.12	1.40	.45	.04	.31		.40	.30		
Nov.	.50	.10	0	.22	.14	.46	.12	.70	.15	.36		
Dec.	.20	0	0	0	.08	0	.28	0	.16	T		
Yearly	5.05	4.31	9.31	13.54	8.31	8.87	5.73		8.31	14.11		

**RAINFALL ON THE RIO GRANDE WATERSHED
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Month	51		52		53		54		55	
	Garner Ranch		Steve Stumberg Ranch		Cedar Service Station		McGonagill Ranch - Headquarters		McGonagill Ranch - East Mill	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.55	.46	.40	.72	.36		.30	.10	.30	.10
Feb.	0	.03	0	.18	0		0	.04	0	.03
Mar.	0	.17	0	.21	0		0	.37	0	.43
Apr.	.33	.69	.40	.74	.57		.30	.58	.30	.53
May	.96	1.12	.45	1.80	2.39		.31	1.15	.30	.79
June	1.52	1.12	2.45	1.23	4.97		5.35	1.89	3.95	1.31
July	1.91	.80	.80	1.76	.86		2.07	1.59	1.50	.70
Aug.	2.51	1.25	.60	1.22	2.55		2.07	1.79	.30	1.08
Sept.	3.08	.93	2.27	2.00	1.36		1.75	.75	1.20	1.12
Oct.	0	.85	0	.96	0		.31	.17	.30	.25
Nov.	.41	.12	.50	.44	.62		0	.17	0	.15
Dec.	0	.11	.05	.74	.11		0	.25	0	.58
Yearly	11.27	7.65	7.92	12.00	13.79		12.46	8.85	8.15	7.07

Month	56		57		58		59		60	
	Arvin and Harkins Ranch - Header		Arvin and Harkins Ranch - Bean		Arvin and Harkins Ranch - Camel		Arvin and Harkins Ranch - Headquarters		Arvin and Harkins Ranch - Monty Corder	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.50	.44	.70	.49	.60	.31	.50	.50	.70	.47
Feb.	0	.13	0	.06	0	.06	0	.11	0	.09
Mar.	0	.39	0	.37	0	.36	0	.34	0	.40
Apr.	1.50	1.47	1.50	1.46	2.00	1.33	1.70	1.32	1.30	1.29
May	1.50	1.74	1.60	1.49	.60	1.27	.70	1.81	.30	1.33
June	4.00	1.66	3.10	1.60	2.60	1.27	1.90	1.25	2.90	1.76
July	.60	.99	.90	.94	.40	.73	.20	.85	1.20	.81
Aug.	1.10	1.70	.50	1.83	0	1.03	.40	1.37	1.00	.87
Sept.	2.10	1.27	2.00	1.06	1.60	.87	1.30	.97	1.90	.99
Oct.	0	1.06	0	1.23	0	.97	0	.99	0	.84
Nov.	.30	.28	.30	.16	.40	.14	.40	.16	.20	.14
Dec.	0	.24	0	.28	0	.21	0	.22	0	.22
Yearly	11.60	11.37	10.60	10.97	8.20	8.55	7.10	9.89	9.50	9.21

Month	61		62		63		64		65	
	E. W. Hardgrave Ranch		Adams Bros. Ranch		Bricker Ranch		Dryden		Pumpville	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.82	.43	.69	.43	.47	.20	.59	.60	.20	.59
Feb.	0	.05	T	.03	.08	.06	.04	.36	T	.29
Mar.	0	.32	0	.25	.06	.32	.04	.39	T	.46
Apr.	1.32	1.37	.50	1.04	.58	2.07	.50	.93	.40	1.18
May	2.51	1.79	.44	1.19	1.25	1.14	1.97	2.10	.79	1.82
June	1.50	1.60	1.71	1.57	3.29	2.14	1.69	1.09	2.85	1.93
July	1.43	.60	.70	.40	.08	.23	T	1.13	.50	.39
Aug.	2.08	.70	1.90	.80	.91	.46	2.19	1.34	.91	.53
Sept.	1.71	1.30	6.00	2.06	1.91	1.51	3.57	1.69	4.22	1.79
Oct.	0	.73	0	.42	0	.31	0	1.01	0	1.30
Nov.	.71	.28	.58	.27	.37	.18	.47	.36	.46	.14
Dec.	.08	.22	.06	.22	.15	.25	.16	.54	T	.59
Yearly	12.16	9.39	12.58	8.68	9.15	8.87	11.22	11.54	10.33	11.01

Month	66		67		68		69		70	
	C. L. Arthur Ranch		Hoffman Ranch		Ingram Ranch		Shumla Bend		Martin King Ranch	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	1.55	.98			.68		.40		.65	
Feb.	0	.10			0		.10		.05	
Mar.	0	.38			0		0		0	
Apr.	.20	.53			1.01		.50		.51	
May	.85	1.60			5.60		4.55		1.20	
June	1.65	1.72	.38				.90		.49	
July	4.70	2.64	3.35				.30		.23	
Aug.	2.32	2.02	2.41				6.85		2.30	
Sept.	2.45	1.56	1.22				1.00		2.06	
Oct.	1.07	.83	1.20				0		.47	
Nov.	.80	.33	.25				.65		.70	
Dec.	.10	.23	.12				.30		.30	
Yearly	15.69	12.92					15.55		8.96	

**RAINFALL ON THE RIO GRANDE WATERSHED
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Month	71		72		73		74		75	
	Comstock		Wardlaw Ranch		Lucious Hinds Ranch		Upper Devils		Devils Lake	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.50	.69			.53		.45		.56	.69
Feb.	.06	.73			.10		.10		.17	.66
Mar.	0	.76			0		0		.03	.74
Apr.	.60	1.57			.50		.30		.65	1.71
May	2.19	1.85			1.50		1.07		2.31	1.62
June	1.42	2.20			2.48		1.75		.79	2.28
July	.53	.96			0		1.34		.89	
Aug.	1.49	2.19	5.73		2.55		1.95		1.09	1.44
Sept.	2.51	1.74	.90		3.80	2.16	3.95	2.10	1.29	1.53
Oct.	.18	1.37	.10		0	1.80	.45	1.72	.35	1.34
Nov.	1.22	.47	1.30		.80	.40	.80	.45	1.37	.64
Dec.	.55	.86	.35		.19	.10	.18	.09	.44	.75
Yearly	11.25	15.39			12.45		12.34		10.94	14.29

Month	76		77		78		79		80	
	Diablo Dam Site		Armistead Ranch		Maverick County Canal Headgate		Quernado		Maverick Power Plant	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.15		.45	.23	.43	.41	.56	.83	.14	.31
Feb.	.05		.56	.35	.29	1.27	.82	1.24	.78	.30
Mar.	0		.55	1.09	.10	.68	.48	.74	1.21	.92
Apr.	.05		T	1.79	0	1.14	0	1.55	0	.73
May	1.14		2.27	1.81	2.60	1.66	.69	2.48	2.73	1.80
June	.50		.90	2.90	1.70	1.76	1.70	1.68	1.90	1.84
July	.90		2.00	.98	1.47	1.98	2.70	1.24	3.21	1.24
Aug.	3.00		3.80	2.77	3.78	1.67	3.00	1.78	2.80	2.57
Sept.	1.10		6.15	4.56	.85	2.48	.70	2.69	1.71	1.62
Oct.	T	2.20	.20	1.55	0	1.35	.10	1.44	.04	.70
Nov.	1.35	.68	1.70	.72	1.20	.41	1.80	.59	1.40	.79
Dec.	.50	.25	T	.30	.45	.57	.50	.58	1.00	.38
Yearly	8.74		18.58	19.05	12.87	15.38	13.05	16.84	16.92	13.20

Month	81		82		83		84		85	
	Tortuga Ranch		El Indio		Wuensche Farm		Cuervo Creek		Apache Ranch	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.		.33	.83	.78	.97	.40	.90	.90	.50	.55
Feb.		.07	1.65	.72	.97	.72	1.00	.50	.70	.35
Mar.	0	.57	0	.61	0	.55	0	T	0	T
Apr.	0	.59	.25	1.10	.39	1.43	0	1.36	0	1.55
May	1.05	2.73	3.03	3.69	2.01	2.70	1.45	2.48	1.75	2.48
June	.77	1.02	.38	1.54	1.07	.86	1.55	1.32	.15	.08
July	7.49	1.38	1.01	.70	1.66	.92	1.60	1.00	2.25	1.12
Aug.	9.17	3.57	3.60	2.42	4.75	1.78	5.65	3.08	7.49	5.80
Sept.	2.02	2.23	.70	2.53	4.45	1.77	1.67	.84	4.60	2.30
Oct.	0	.48	.50	.94	.36	.48	1.30	1.15	1.50	2.05
Nov.	.72	.32	1.00	.50	.87	.56	.90	.45	0	0
Dec.	.42	.16	.43	.67	.32	.13	.20	.10	0	.17
Yearly		13.45	13.38	16.20	17.82	12.30	16.22	13.18	18.94	16.45

Month	86		87		88		89		90	
	Justapor Ranch		Santa Ysabel Farm		Laredo Water Plant		Fort McIntosh		Corralitos Ranch	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.50	.40	.63	.28	.55	.82	.69	.71	.30	.13
Feb.	.50	.40	.28	.32	.28	.66	.48	.81	0	.17
Mar.	.20	.28	0	.32	.05	.66	0	.76	0	.05
Apr.	.20	1.33	0	.69	T	1.09	.01	1.33	0	.93
May	1.80	2.17	2.97	2.10	1.17	2.52	1.86	2.68	0	.93
June	2.00	1.33	.94	.59	.97	2.11	.88	2.09	.40	.92
July	.20	.10	.20	.09	.20	1.24	.54	1.45	.30	.63
Aug.	.20	1.52	2.69	5.39	1.62	1.52	2.41	1.73	.80	3.57
Sept.	1.50	1.03	1.11	1.39	2.03	2.96	1.93	2.79	3.40	1.67
Oct.	2.03	.07	1.54	.47	1.46	.38	1.60	.10	2.04	
Nov.	.27	1.74	1.12	2.45	.77	2.60	1.15	1.40	.57	
Dec.	.28	.51	.31	.01	1.00	.06	.87	.08	.08	.16
Yearly		11.14	11.14	14.14	9.80	16.81	11.84	17.97	6.78	11.77

**RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
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Month	91		92		93		94		95	
	Huisache Ranch		Zapata Station		Arroyo Tigre Chiquito		Falcon Dam		Roma	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.60	.42	.50	.39	1.00		.98	.28	1.06	.76
Feb.	.60	.30	.20	.10	.50		.40	.28	.52	.77
Mar.	T	.10	0	.10	0		.10	.91	.08	.98
Apr.	0	.92	0	.68	0	1.40	.02	.86	0	1.26
May	.30	.88	.30	1.62	1.60	1.08	1.11	1.90	.65	1.65
June	1.15	1.38	.40	1.18	.80	1.80	.59	1.61	.94	2.28
July	.80	1.40	.70	1.08	.80	.45	1.24	.54	.64	.97
Aug.	1.50	2.57	2.75	2.83	1.40	.80	1.52	2.75	4.68	2.21
Sept.	3.60	2.16	4.80	2.36	4.30	3.25	4.14	2.82	2.99	3.36
Oct.	.60	2.83	.50	1.58	1.30	1.30	.04	1.59	1.35	2.44
Nov.	2.40	.97	1.30	.70	1.60	1.10	1.44	.55	1.25	.51
Dec.	.40	.36	.30	.33	.40	.20	.13	.29	0	.40
Yearly	11.95	14.29	11.75	12.95	13.70		11.71	14.38	14.16	17.59

Month	96		97		98		99		100	
	HCWCID #6 (Avg. of 3 gages)		Mission Pump		HCWCID #7		O. C. Dale Farm		HCWCID #15	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.69	.39	.64	.18	.73	.45	.87	.54	.50	.24
Feb.	.23	.48	.36	.50	.21	.40	.38	.58	.25	.35
Mar.	.03	.27	.11	.47	.02	.32	.11	.40	0	.39
Apr.	.02	1.60	.08	1.58	.06	.19	.08	2.32	0	1.42
May	.03	.92	.12	1.06	.15	1.23	.23	1.14	0	1.54
June	.19	1.21	0	1.56	.03	2.32	.04	2.41	.20	1.91
July	1.27	.68	1.10	1.40	.92	1.01	1.41	1.27	1.72	1.06
Aug.	1.12	3.01	2.08	2.40	2.10	2.44	1.99	1.97	.44	1.95
Sept.	4.22	2.43	4.20	1.21	5.06	1.72	6.27	2.22	7.25	2.78
Oct.	.78	3.88	.58	3.81	.70	2.79	2.14	3.78	1.66	2.18
Nov.	1.04	.86	.55	.96	.75	.91	1.24	1.06	1.15	.76
Dec.	.13	.28	.62	.52	.37	.51	0	.46	0	.29
Yearly	9.75	16.01	10.44	15.65	11.10	14.29	14.76	18.15	13.17	14.87

Month	101		102		103		104		105	
	Edinburg Filtration Plant		HCWID #6		Murse Farm		CCWCID #3 (Avg. of 6 gages)		La Feria Pump	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.57	.31	.70	.28	.60	.36	.75	.34	.66	.32
Feb.	.29	.46	.30	.52	.20	.52	.51	.50	.70	.39
Mar.	.04	.31	0	.23	0	.36	0	.23	0	.21
Apr.	.11	2.06	.15	1.56	0	1.82	.21	1.90	0	1.60
May	.12	1.74	.25	1.52	1.55	1.64	.71	1.62	.90	1.92
June	.14	1.88	.27	1.98	0	1.76	0	2.36	0	2.08
July	1.11	.88	2.00	1.30	2.97	1.06	3.92	1.48	4.80	2.18
Aug.	1.06	1.76	1.63	2.02	7.80	4.98	3.56	4.66	3.50	2.92
Sept.	5.97	2.50	5.08	3.05	11.35	6.62	13.51	6.80	11.50	7.79
Oct.	1.23	2.74	1.71	2.46	1.10	2.42	2.07	3.08	3.20	4.81
Nov.	1.22	.92	.85	1.21	1.25	1.08	.94	1.56	1.50	1.42
Dec.	0	.33	.25	.41	0	.24	.08	.41	0	.30
Yearly	11.86	15.89	13.19	16.54	26.82	22.86	26.26	24.94	26.76	25.94

Month	106		107		108		109		110	
	CCWCID #19		San Benito Pump		Whipple Farm		CCWID #11 (Avg. of 18 gages)		Los Fresnos Pump	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.90	.36	.79	1.22	1.45	.54	1.76	.44	1.20	.38
Feb.	.64	.42	.47	.62	.90	.49	.65	.34	.45	.43
Mar.	0	.20	0	1.02	0	.18	.65	.44	T	.20
Apr.	.27	1.54	.20	1.12	.30	1.24	.23	1.25	.55	1.29
May	.48	1.44	.49	2.50	6.05	3.17	0	1.02	.50	1.31
June	0	2.39	0	2.26	0	1.24	0	1.05	T	.368
July	2.69	1.02	2.47	1.71	7.21	3.74	3.51	2.16	5.25	2.80
Aug.	2.29	3.55	4.08	2.28	2.45	2.74	1.18	3.60	1.25	2.28
Sept.	9.33	4.49	8.38	3.98	7.88	5.31	9.23	4.48	11.45	6.70
Oct.	1.47	2.22	1.91	2.26	2.35	2.71	2.30	3.10	3.30	5.12
Nov.	.93	1.31	.67	.81	.80	2.24	.57	1.84	.45	1.70
Dec.	.19	.44	.31	1.39	0	.41	0	.35	0	.29
Yearly	19.19	19.38	19.77	21.17	29.39	24.01	20.08	20.07	24.40	26.18

**RAINFALL ON THE RIO GRANDE WATERSHED
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The monthly records for Mexican rainfall stations, with averages for their periods of record, are tabulated below in their downstream order. The numerals above the station names are used to identify these stations indicated on the map, pages 50 and 51. These records have not been published elsewhere. On page 92, these same rainfall stations are listed in alphabetical order, showing the location, elevation, period of record, type of gage in use, tributary or subdivision of the Rio Grande watershed on which the station is located, and the observer. Records of daily rainfall at all stations operated by the Mexican Section of this Commission appear in their issue of Water Bulletin No. 25; for all other stations, the daily records are on file in the office of the Mexican Section.

Month	111		112		113		114		115			
	San Antonio, Dgo.	1955	Parral, Chih.	1955	Average	Balleza, Chih.	1955	Average	La Boquilla, Chih.	1955	Ojo Caliente, Chih.	Average
Jan.	.41	.34	.33	.15	.30	.28	.21	.30	.17	.08		
Feb.	0	.05	0	.18	T	.39	.07	.14	.18	.03		
Mar.	0	.04	0	.12	T	.08	0	.17	T	.19		
Apr.	0	.26	0	.20	0	.19	.30	.18	.22	.14		
May	.04	.44	.26	.32	T	.15	.05	.60	T	.36		
June	.18	1.87	.61	1.57	.16	1.17	.69	1.48	1.02	1.72		
July	4.84	4.31	4.31	4.22	6.38	4.60	3.61	2.99	3.94	3.55		
Aug.	6.87	3.61	6.46	4.02	7.71	4.60	3.81	2.93	3.43	2.22		
Sept.	4.90	3.43	2.36	4.01	3.22	3.45	3.96	2.94	4.61	2.44		
Oct.	.89	1.01	.12	1.18	2.19	.77	.34	.94	.13	.91		
Nov.	.24	.24	T	.58	.09	.55	.24	.38	.26	.09		
Dec.	0	.27	0	.45	0	.44	0	.40	0	.22		
Yearly	18.37	15.87	14.45	17.00	20.05	16.67	13.28	13.45	13.96	11.95		

Month	116		117		118		119		120			
	Rosetilla, Chih.	1955	Villalba, Chih.	1955	Average	Las Virgenes, Chih.	1955	Average	Delicias, Chih.	1955	Guerrero, Chih.	Average
Jan.	.22	.47	.20	.35	.29	.24	.04	.38	.89	.55		
Feb.	0	.05	0	.08	T	.02	T	.10	T	.40		
Mar.	0	.17	0	.04	T	.05	T	.12	0	.20		
Apr.	0	.20	0	.11	0	.11	0	.21	0	.08		
May	.01	.24	.13	.18	.12	.16	.04	.20	.08	.17		
June	.33	1.28	.18	.87	1.55	1.04	2.70	1.21	.33	1.63		
July	3.81	2.50	5.54	3.71	2.05	2.29	6.58	2.57	5.49	4.49		
Aug.	3.46	2.51	3.59	2.58	3.66	2.05	5.11	2.58	10.26	5.07		
Sept.	.93	2.09	1.06	2.56	.40	1.49	1.07	2.05	1.26	3.17		
Oct.	.16	.82	.93	1.16	.28	.62	1.45	.86	2.48	1.24		
Nov.	.79	.24	.67	.22	.08	.14	.36	.26	.20	.52		
Dec.	0	.33	0	.37	0	.37	0	.39	0	.70		
Yearly	9.71	10.90	12.30	12.23	8.43	8.58	17.35	10.93	21.07	18.38		

Month	121		122		123		124		125			
	La Junta, Chih.	1955	Cuauhtemoc, Chih.	1955	Average	Chihuahua, Chih.	1955	Average	Las Burras, Chih.	1955	Maclovio Herrera, Chih.	Average
Jan.	2.11	1.04	.24	.29	.20	.29	.39	.11	.28	.35		
Feb.	.08	.54	0	.13	0	.21	0	.05	0	.10		
Mar.	.12	.28	0	.12	T	.22	0	.17	0	.25		
Apr.	0	.19	0	.22	0	.18	0	.12	0	.24		
May	.05	.25	.12	.18	.26	.37	.30	.38	.30	.63		
June	.54	1.54	.83	1.51	.69	1.46	.32	1.13	.24	1.54		
July	8.45	5.30	4.72	4.88	6.95	3.55	4.75	3.20	1.56	3.01		
Aug.	3.04	4.90	3.82	4.07	3.66	3.42	2.56	2.17	1.48	3.02		
Sept.	.80	2.26	4.41	2.44	.52	3.03	.45	1.41	.79	3.56		
Oct.	2.04	1.33	1.26	1.21	1.57	.90	.61	.38	.79	.70		
Nov.	.15	.35	T	.19	T	.46	.43	.10	T	.11		
Dec.	0	.81	0	.45	0	.39	0	.15	0	.96		
Yearly	17.38	18.79	15.40	15.69	13.85	14.48	9.81	9.37	5.44	14.47		

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	126		127		128		129		130	
Month	Cuchillo Parado, Chih.		Ojinaga, Chih. (M. S. M.)		Ojinaga, Chih. (IB&WC)		Cd. Acuña, Coah.		Palestina, Coah.	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.51	.16	.20	.24	.41		.47	.35		1.17
Feb.	0	.06	0	.15	0		.28	.14		1.02
Mar.	0	.22	0	.20	0		.04	.89		.73
Apr.	T	.08	.51	.26	.77	.54	.12	1.00		1.56
May	.35	.64	.28	.52	.16	.17	2.03	1.88		3.01
June	.89	.96	1.22	.81	.63	.92	1.20	1.85		2.10
July	.82	2.10	.94	1.13	.63	.48	.61	.24		2.16
Aug.	3.53	2.26	.87	1.29	1.38	1.74	3.41	1.73	1.73	2.40
Sept.		.42	2.20	1.18	1.35	.74	2.11	2.30	.18	3.02
Oct.		.12	.55	.86	.49	.30	T	.93	T	1.25
Nov.		.13	.31	.40	.44	.22	1.32	.45	1.46	.75
Dec.		.17	0	.38	0	0	.45	.38	.37	1.03
Yearly		7.32	7.08	7.42	6.26		12.04	12.14		20.20

	131		132		133		134		135	
Month	Jiménez, Coah.		Piedras Negras, Coah.		Allende, Coah.		Villa Hidalgo, Coah.		Nuevo Laredo, Tamps.	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	1.24	.53	.56	.48	.83	.53	1.12	.38	1.42	.74
Feb.	.41	.58	.88	.31	.73	1.34	.75	.35	.83	.72
Mar.	.28	1.13	.36	.89	T	.52	T	.48	T	.75
Apr.	0	1.00	T	.80	T	.93	T	1.23	T	1.13
May	1.74	2.20	1.36	2.37	.87	2.53	1.65	2.82	3.15	2.38
June	1.30	.97	1.67	.66	.61	1.93	.61	.66	1.34	1.90
July	2.96	.86	8.73	2.33	5.71	1.50	1.26	.29	.67	1.34
Aug.	3.76	2.79	7.11	3.27	4.15	2.46	4.70	1.81	3.23	1.22
Sept.	.87	1.70	2.03	1.46	T	2.02	4.51	2.09	2.80	2.66
Oct.	T	1.09	.31	1.20	.37	1.10	.79	1.29	.18	1.27
Nov.	2.52	.80	1.34	.61	1.30	.42	.98	.49	3.58	.85
Dec.	.41	.54	.04	.36	1.75	.53	.39	.41	.08	.98
Yearly	15.49	14.19	24.39	14.74	16.32	15.81	16.76	12.30	17.28	15.94

	136		137		138		139		140	
Month	Rancho San Juan de la Palma, Tamps.		Cuatro Ciénegas, Coah.		Castaños, Coah.		Monclova, Coah.		San Buenaventura, Coah.	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.			1.10	.35	1.81	.55	1.08	.45	1.45	.65
Feb.			.43	.31	.63	.43	.94	.46	.93	.45
Mar.			T	.06	T	.31	.06	.29	0	.20
Apr.	0		0	.27	T	.51	0	.55	T	.55
May	.32		1.56	.95	.73	1.57	1.13	1.47	1.57	1.44
June	.73		.81	.69	1.18	2.13	.17	1.17	.61	1.57
July	.91		.79	.78	T	1.31	2.07	1.57	.83	1.61
Aug.	2.52		3.17	.96	9.45	2.42	3.71	1.69	4.90	2.02
Sept.	6.10		1.40	1.09	4.37	2.69	1.92	2.79	1.02	.96
Oct.	.08		.08	.76	3.50	1.68	.62	1.18	.37	1.24
Nov.	2.91		1.26	.32	2.36	.32	2.15	.59	1.74	.52
Dec.	0		0	.45	0	.35	.10	.57	T	.68
Yearly			10.60	6.99	24.03	14.27	13.95	12.78	13.42	12.89

	141		142				143		144	
Month	Progreso, Coah.		Múzquiz, Coah.				Nueva Rosita, Coah.		Sabinas, Coah.	
	1955	Average	1953	1954	1955	Average	1955	Average	1955	Average
Jan.	1.24	.52		.59	0	.90	1.06	.71		.73
Feb.	.59	.35		0	0	.53	.79	.45		.85
Mar.	.05	.25		0	0	.96	T	.34		.57
Apr.	T	1.43		1.07	0	1.10	T	1.19		1.29
May	1.93	2.52		9.74	0	3.65	.63	2.59		2.90
June	.33	1.47		1.69	0	3.08	1.18	1.86		2.18
July	1.52	.72	0	0	0	1.94	1.18	1.45		1.29
Aug.	4.96	2.37	4.09	T	0	2.78	3.66	1.90		2.52
Sept.	.80	2.46	.26	0	1.93	4.73	1.34	2.21	.38	3.26
Oct.	.94	1.79	2.24	0	1.19	2.24	1.10	1.49	2.28	1.70
Nov.	1.94	.44	0	0	1.58	1.26		.47	1.16	.46
Dec.	.44	.60	0	0	1.10	1.04		.69	.38	.58
Yearly	14.74	14.92		13.09	5.80	24.21		15.35		18.33

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Month	145		146		147		148		149	
	Villa Juárez, Coah.		Don Martín, Coah.		Laguna de Salinillas, N. L.		Anáhuac, N. L.		Cd. Mier, Tamps.	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.55	.58	1.12	.79	1.20	.68	.96	.73		
Feb.	.20	.34	.41	.63	.69	.65	.51	.48		
Mar.	.04	.23	.08	.58	.04	.61	0	.66		
Apr.	0	1.07	.10	1.22	0	.94	0			
May	2.36	1.89	2.07	2.27	4.13	2.53	4.26	2.69		
June	.51	1.15	1.10	1.78	.59	1.22	.18	1.43		
July	2.13	.70	1.32	1.02	1.16	.57	1.42	1.28		
Aug.	5.22	2.05	4.13	1.99	5.59	3.38	4.53	2.07		
Sept.	.75	2.86	1.69	2.76	2.13	2.12	2.13	2.66		
Oct.	2.24	1.85	1.71	1.59	.20	1.41	.14	1.38	.71	
Nov.	1.36	.53	1.34	.58	1.30	.43	1.99	.51	1.75	
Dec.	.12	.35	.24	.74	.61	.51	.98	.81	T	
Yearly	15.48	13.60	15.31	15.95	17.64	15.05	17.10	15.80		

Month	150		151		152		153		154	
	Cd. Miguel Alemán, Tamps.		Rayones, N. L.		Montemorelos, N. L.		Laguna de Sánchez, N. L.		Villa Allende, N. L.	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	1.06	.31	T	.38	1.02	.85	.10	.47	.35	.94
Feb.	.28	.25	0	.41	1.20	.87	.35	.46	1.00	.97
Mar.	.12	1.07	T	.38	.59	1.14	0	.58	T	1.31
Apr.	T	1.08	T	.76	1.27	2.10	T	1.27	1.22	2.11
May	.75	1.86	2.58	1.38	1.36	2.67	2.87	1.74	2.11	2.92
June	.83	1.91	.08	2.16	.87	3.52	.51	3.32	2.42	4.72
July	1.14	.94	.31	1.02	5.18	2.16	5.37	2.78	8.98	2.96
Aug.	5.75	3.62	3.86	3.24	4.37	4.12	2.17	4.77	4.11	5.21
Sept.	3.82	5.97	2.91	10.79	5.29	7.29	5.49	10.02	6.91	
Oct.	3.51	0	1.70	2.07	3.55	1.22	3.19	2.54	5.64	
Nov.	.87	1.28	.36	.45	1.57	1.08	.36	.91	1.24	
Dec.	.28	0	.26	.20	.96	T	.44	1.57	1.06	
Yearly		19.52	14.08	14.96	29.37	28.80	20.96	24.87	35.23	35.99

Month	155		156		157		158		159	
	Santa Catarina, N. L.		Monterrey, N. L.		Las Comitas, N. L.		Villa de Santiago, N. L.		Cadereyta, N. L.	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.16	.95	.51	.67	0	.30	.67	.88	1.07	.81
Feb.	.39	.39	.83	.62	.26	.28	1.06	.94	1.00	.91
Mar.	0	.34	T	.77	0	.36	.14	1.10	.13	1.31
Apr.	.04	.65	.06	1.15	.45	.91	1.66	.10	1.96	
May	.46	.60	.82	1.56	1.59	.85	1.34	2.60	2.11	2.23
June	.39	2.10	.04	2.79	1.00	2.50	1.22	4.97	.64	3.48
July	2.19	1.36	8.06	2.53	4.78	1.68	11.52	3.33	2.50	2.49
Aug.	2.69	3.10	3.59	3.10	1.50	3.68	4.57	5.30	6.65	3.75
Sept.	4.73	3.08	7.48	5.65	6.71	4.54	6.77	8.44	8.11	4.63
Oct.	1.09	1.84	1.38	3.21	.58	2.27	1.31	5.24	2.78	3.16
Nov.	2.17	.46	.48	1.30	1.47	.40	.58	1.32	.31	1.19
Dec.	T	.67	.33	.80	0	.44	1.02	.99	T	.74
Yearly	14.31	15.54	23.58	24.15	18.34	18.21		36.77	25.40	26.66

Month	160		161		162		163		164	
	Las Enramadas, N. L.		El Cuchillo, N. L.		Gral. Bravo, N. L.		Gral. Cepeda, Coah.		Reata, Coah.	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	1.20	.97	.59	.78	1.18	.75	.01	.49		.52
Feb.	.53	.62	.10	.50	.30	.41	.02	.40		.38
Mar.	.10	.68	.09	.43	.10	.62	0	.27		.24
Apr.	.33	1.57	.04	1.51	.06	1.50	0	.36		.56
May	1.46	2.87	2.47	1.92	2.68	2.60	2.01	.81		.68
June	1.36	3.46	0	2.26	.06	2.60	.01	2.24		1.69
July	3.84	2.32	2.07	1.54	.85	2.44	4.12	3.65		1.03
Aug.	.79	3.36	4.99	3.37	5.00	2.70	4.39	3.01		2.95
Sept.	9.13	5.20	5.50	3.70	6.79	3.62	.83	2.92		1.12
Oct.	0	2.47	.15	2.17	1.00	1.88	0	1.28	0	.25
Nov.	.37	.62	.56	.40	1.99	.87	.61	.48	2.46	.67
Dec.	.18	.70	T	.42	T	.78	0	.57	0	.15
Yearly	19.29	24.84	16.56	19.00	20.01	20.77	12.00	16.48		10.24

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Month	165		166		167		168		169	
	Saltillo, Coah.		Ramos Arizpe, Coah.		Rinconada, N.L.		Ciénaga de Flores, N.L.		Topo Chico, N.L.	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.26	.58	.20	.43	.01	.21	.88	1.20	.26	.55
Feb.	.33	.49	.12	.33	.24	.39	.98	.58	.77	.79
Mar.	.07	.38	T	.31	0	.24	.20	.84	.02	.72
Apr.	.04	.72	.28	.47	0	.62	T	1.00	0	1.08
May	1.19	1.00	1.09	.75	.63	.46	2.94	2.08	.26	1.02
June	.17	2.08	.31	1.11	0	.94	T	2.50	0	2.05
July	3.44	2.72	1.53	1.45	.59	.46	2.86	2.04	3.66	1.57
Aug.	4.56	2.38	.36	1.36	.63	1.55	2.68	4.52	3.27	3.35
Sept.	1.39	2.49	1.50	1.71	2.05	1.73	4.58	4.49	5.63	4.38
Oct.	.41	1.23	.71	.67	1.18	.94	2.64	2.07	3.07	2.27
Nov.	.75	.91	.65	.45	0	.18	1.02	.67	0	.76
Dec.	0	.64	0	.54	0	.24	T	.69	0	.64
Yearly	12.61	15.62	6.75	9.58	5.33	7.96	18.78	22.68	16.94	19.18

Month	170		171		172		173		174	
	Higueras, N.L.		Los Ramones, N.L.		Los Herreras, N.L.		Cerralvo, N.L.		Comales, Tamps.	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.20	.76	1.10	.63	.91	.63	.86	.70	1.09	.72
Feb.	.23	.55	.55	.61	.22	.49	.19	.51	.32	.58
Mar.	0	.58	T	.69	.08	.70	.01	.78	.11	.73
Apr.	0	1.15	T	1.86	.08	1.49	.05	1.74	.09	1.51
May	.65	1.68	1.48	2.12	2.40	2.83	2.02	3.17	.92	1.87
June	.12	2.50	.45	2.88	0	2.85	T	2.48	0	1.97
July	3.37	2.15	2.19	2.01	1.38	1.31	1.46	1.41	.87	1.05
Aug.	3.19	3.03	1.81	3.78	3.24	2.88	2.28	3.78	2.75	2.71
Sept.	11.74	4.45	10.65	4.49	8.59	4.19	8.80	5.02	3.11	3.06
Oct.	.79	1.68	T	2.31	T	2.21	1.07	2.36	.67	2.09
Nov.	.35	.78	.98	.40	.81	.46	.64	.57	.64	.47
Dec.	.06	.69	.20	.25	0	.43	.13	.38	.06	.67
Yearly	20.70	20.00	19.41	22.03	17.71	20.47	17.51	22.90	10.63	17.43

Month	175		176		177		178		179	
	Anzaldúas, Tamps.		Camargo, Tamps.		San Miguel de Camargo, Tamps.		Río Bravo, Tamps.		Reynosa, Tamps.	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	.91	.40	.96	.41	.94	.37	.89	.41	2.05	1.08
Feb.	.28	.38	.31	.49	0	0	.69	.37	.79	.46
Mar.	.95	T	.94	.06	.79	.08	.34	.08	.59	
Apr.	1.97	.02	2.26	.45	2.60	0	1.60	.14	1.05	
May	.44		1.07	.33	.46	.04	1.33	.04	2.42	
June	1.61	1.42	1.74	.51	1.69	0	2.75	0	1.91	
July	.67	.39	.53	2.81	1.04	2.89	2.20	1.10	1.39	
Aug.	3.19	3.21	1.77	1.97	0	1.72	5.24	3.42	.83	1.75
Sept.	5.85	3.51	5.61	2.94	0	8.35	3.85	.33	2.38	
Oct.	4.94	1.00	3.74	3.17	5.38	1.54	1.61	.11	2.47	
Nov.	.58	.96	.83	1.30	.75	.59	.73	.50	.74	
Dec.	.26	.28	.22	.37	.27	.04	.27	.10	.61	
Yearly		18.92		17.14		15.07	20.35	18.88	6.07	16.85

Month	180		181		182		183		184		185	
	Retamales, Tamps.		Control(C1-K-9), Tamps.		Valle Hermoso, Tamps.		Méndez, Tamps.		Linares, N.L.		Villagrán, Tamps.	
	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average	1955	Average
Jan.	1.34	.48	1.02	1.08	1.22	.44	1.46	.91	.61	1.00	.14	.40
Feb.	.55	.34	.85	.62	.55	.51	1.39	.59	2.29	.86	.39	.75
Mar.	.16	.63	.14	.74	.47	.42	.26	.98	.23	1.17	.06	.95
Apr.	.24	1.33	.37	1.10	.28	.52	.83	1.13	.34	2.33	3.21	2.81
May	.13	1.75	.81	2.72	.04	2.88	.33	2.85	2.89	3.43	.79	4.97
June	1.17	2.81	T	2.05	0	3.12	0	2.42	1.26	3.60	T	3.87
July	2.40	1.13	3.41	1.26	3.38	1.72	2.08	1.06	2.15	2.95	6.83	2.67
Aug.	6.69	2.88	3.39	3.04	1.79	1.98	1.62	3.85	6.12	3.45	8.35	6.84
Sept.	6.15	3.22	9.51	4.96	4.57	4.88	10.91	4.02	15.82	6.46	18.23	6.74
Oct.	1.07	2.65	2.56	2.05	1.75	3.10	.98	1.98	.80	3.22	1.34	3.52
Nov.	.52	.71	1.22	1.14	.30	.40	.66	.41	.59	1.22	.35	.87
Dec.	0	.34	0	.54	.14	.11	0	.42	.10	.98	.08	.29
Yearly	20.42	18.27	23.28	21.30	14.49	20.08	20.52	20.62	33.20	30.67	39.77	34.68

**AVERAGE RAINFALL ON SUBDIVISIONS OF THE RIO GRANDE WATERSHED
IN INCHES**

With Totals and Normals for the 85 Years 1871-1955, Inclusive

The precipitation records of all stations on or adjacent to the watershed subdivisions listed below have been used, with proper weighting for area, in calculating the average rainfalls shown here. The hundreds of individual records are delineated in the various "Indexes to Precipitation Records" shown in Water Bulletins Nos. 10, 14, and 22.

Watershed Subdivision	Drainage Area	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
El Paso to Fort Quitman	2,723 Sq. Mi.	1955	.32	.01	.04	0	.18	.14	4.22	1.61	.62	1.54	.10	.02	8.80
		Total	38.92	31.26	28.67	25.29	35.69	68.62	204.79	167.19	117.75	78.27	37.60	52.90	886.95
		Average	.46	.37	.34	.30	.42	.81	2.41	1.97	1.39	.92	.44	.62	10.45

Fort Quitman to Upper Presidio	3,016 Sq. Mi.	1955	.60	T	0	.14	.41	.61	3.24	1.73	1.59	2.30	.33	.02	10.97
		Total	33.03	20.76	22.18	32.77	51.82	103.19	274.93	210.24	165.47	84.98	33.99	48.32	1,081.68
		Average	.39	.24	.26	.39	.61	1.21	3.23	2.47	1.95	1.00	.40	.57	12.72

* Upper Presidio to Johnson Ranch	4,136 Sq. Mi.	1955	.68	0	0	.54	.47	.86	1.69	1.43	1.92	.69	.48	.01	8.77
		Total	29.48	22.84	16.35	36.18	66.06	91.74	157.57	158.39	121.37	69.98	29.01	36.11	835.08
		Average	.35	.27	.19	.43	.78	1.08	1.85	1.86	1.43	.82	.34	.42	9.82

* Excluding Río Conchos, Alamo, and Terlingua Creeks.

Johnson Ranch to Langtry	12,924 Sq. Mi.	1955	.44	T	T	.44	1.16	2.03	1.35	1.78	2.47	.33	.61	.03	10.64
		Total	42.81	27.06	37.40	69.17	128.87	152.05	165.06	191.78	187.82	98.72	52.15	49.27	1,202.16
		Average	.50	.32	.44	.81	1.52	1.79	1.94	2.26	2.21	1.16	.61	.58	14.14

Pecos River - Sheffield to Pecos River Station	3,504 Sq. Mi.	1955	1.10	.02	.02	.83	2.05	1.98	.89	2.36	2.17	.15	.85	.29	12.71
		Total	61.34	73.17	70.05	170.26	149.63	218.31	162.70	176.34	203.19	151.91	81.45	68.04	1,586.39
		Average	.72	.86	.82	2.00	1.76	2.57	1.91	2.07	2.39	1.79	.96	.80	18.65

* Langtry to Del Rio	2,911 Sq. Mi.	1955	.39	.11	.10	.31	2.29	.84	.85	2.17	1.59	.17	.87	.50	10.19
		Total	44.87	52.04	71.92	115.21	169.29	194.07	102.87	142.37	192.17	111.92	68.99	57.51	1,323.43
		Average	.53	.61	.85	1.36	1.99	2.28	1.21	1.68	2.26	1.32	.81	.68	15.58

* Excluding Pecos and Devils Rivers and Arroyo las Vacas.

Devils River	4,185 Sq. Mi.	1955	.74	.51	.23	.43	2.12	2.08	2.54	2.31	2.48	.40	1.27	.23	15.34
		Total	57.50	53.32	98.18	153.44	219.24	234.77	151.77	180.85	249.09	179.28	140.58	91.54	1,809.56
		Average	.68	.63	1.16	1.81	2.58	2.76	1.79	2.13	2.93	2.11	1.65	1.08	21.31

* Del Rio to Eagle Pass	1,527 Sq. Mi.	1955	.60	.63	.48	.02	2.05	1.81	2.92	3.72	2.51	.17	1.53	.39	16.83
		Total	65.06	74.56	91.84	139.31	251.80	209.50	163.64	166.72	258.95	159.71	91.00	78.59	1,750.68
		Average	.77	.88	1.08	1.64	2.96	2.46	1.93	1.96	3.05	1.88	1.07	.92	20.60

* Excluding San Felipe and Pinto Creeks, Río San Diego and Río San Rodrigo.

* Eagle Pass to Laredo	4,037 Sq. Mi.	1955	.93	.88	.07	.03	1.74	1.17	3.69	4.31	1.73	.46	1.73	.48	17.22
		Total	64.01	66.10	86.88	132.61	272.88	211.95	121.24	202.69	250.43	147.67	82.81	87.98	1,727.25
		Average	.75	.78	1.02	1.56	3.21	2.49	1.43	2.38	2.95	1.74	.97	1.04	20.32

* Excluding Río Escondido.

* Laredo to Falcón Dam	3,178 Sq. Mi.	1955	.67	.43	.02	.02	1.17	.69	.54	1.56	3.87	.50	1.99	.23	11.69
		Total	62.87	62.53	73.89	121.40	286.84	155.08	194.74	155.15	243.43	128.17	141.43	70.13	1,695.66
		Average	.74	.74	.87	1.43	3.37	1.82	2.29	1.83	2.86	1.51	1.66	.83	19.95

* Excluding Río Salado.

* Falcón Dam to Rio Grande City	1,104 Sq. Mi.	1955	1.00	.39	.08	.05	1.04	.51	1.03	2.61	4.09	.87	1.34	.15	13.16
		Total	74.47	65.03	89.30	99.21	207.13	171.47	174.29	180.13	271.63	160.14	61.42	55.67	1,609.89
		Average	.88	.77	1.05	1.17	2.44	2.02	2.05	2.12	3.20	1.88	.72	.65	18.95

* Excluding Río Alamo and Río San Juan.

United States Side Below Rio Grande City	458 Sq. Mi.	1955	.92	.46	.08	.21	.83	.09	3.27	2.91	8.00	1.91	.97	.24	19.89
		Total	102.38	85.27	95.60	112.18	243.28	206.52	154.20	197.49	367.67	208.20	118.09	108.19	1,999.07
		Average	1.20	1.00	1.12	1.32	2.86	2.43	1.81	2.32	4.33	2.45	1.39	1.27	23.50

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

For detailed information regarding the particular months or years missing from the periods of record shown below, see "Index to Precipitation Records" in Water Bulletin Nos. 10, 14, and 22. These indexes also include the sources of data and the years and months included in the periods of record through 1952 for all stations on or adjacent to the watershed of the Rio Grande in the United States and Mexico.

In the United States

STA. NO.	NAME OF STATION	LATITUDE	LONGITUDE	ELEVATION (FEET)	PERIOD OF RECORD	TYPE OF GAGE	WATERSHED SUBDIVISION	OBSERVER
62	Adams Bros. Ranch	30° 10'	101° 58'	2,150	Apr. 1952-1955	Standard	Johnson Ranch to Langtry	George Adams
47	Adobes Ranch	29° 46'	103° 34'	2,500	1950-1955	Visual	Fort Quitman to Upper Presidio	T. C. Davis
1	American Dam	31° 47'	106° 32'	3,730	1950-1955	Standard	El Paso to Fort Quitman	I.B&WC
85	Apache Ranch	27° 56'	103° 58'	500	#May 1953-1955	Cumulative	Eagle Pass to Laredo	Ike Starcki
77	Armistead Ranch	29° 35'	100° 39'	1,510	Dec. 1951-1955	Standard	Del Rio to Eagle Pass	Floyd Hedges
93	Arroyo Tigre Chiquito	26° 41'	99° 07'	314	Apr. 1954-1955	Cumulative	Laredo to Falcon Dam	I.B&WC
66	Arthur, C. L. Ranch	30° 23'	103° 45'	4,900	# Apr. 1964-1955	Standard	Pecos River above Sheffield	C. L. Arthur
57	Arvin & Harkins - Bean	30° 26'	102° 23'	3,100	Nov. 1948-1955	Visual	Johnson Ranch to Langtry	Sid Harkins
58	Arvin & Harkins - Camel	30° 15'	102° 20'	2,890	Nov. 1948-1955	Visual	Johnson Ranch to Langtry	Sid Harkins
56	Arvin & Harkins - Header	30° 27'	102° 26'	3,400	Nov. 1948-1955	Visual	Johnson Ranch to Langtry	Sid Harkins
59	Arvin & Harkins - Headquarters	30° 27'	102° 19'	2,930	Nov. 1948-1955	Visual	Johnson Ranch to Langtry	Sid Harkins
60	Arvin & Harkins - Monty Corner	30° 27'	102° 14'	2,850	Nov. 1948-1955	Visual	Johnson Ranch to Langtry	Sid Harkins
25	Baugh, A. L. Ranch	29° 52'	104° 02'	3,820	#July 1952-1955	Standard	Alamito Creek	A. L. Baugh
44	Black Gap Game Refuge	29° 35'	103° 21'	2,250	1952-1955	Standard	Johnson Ranch to Langtry	F. O. Moore
16	Bloys Camp	30° 33'	104° 07'	5,650	# Apr. 1941-1955	Standard	Alamito Creek	J. H. McMichael
63	Bricker Ranch	29° 59'	101° 52'	1,680	May 1952-1955	Standard	Johnson Ranch to Langtry	Maria Bricker
39	Burtrill Ranch	30° 00'	103° 16'	3,500	Mar. 1932-1955	Standard	Johnson Ranch to Langtry	Mrs. L. B. Burtrill
104	CCWID #5 (La Feria District Office) Avg. of 6 gages	26° 09'	97° 49'	50	1952-1955	Standard	Lower Rio Grande Valley	CCWID #5
109	CCWID #11 (Bayview District Office) Avg. of 18 gages	26° 08'	97° 21'	25	1952-1955	Standard	Lower Rio Grande Valley	CCWID #11
106	CCWID #19 (Adams Gardens)	26° 10'	97° 47'	50	1952-1955	Standard	Lower Rio Grande Valley	CCWID #19
53	Cedar Service Station	29° 55'	101° 55'	1,850	1955	Standard	Johnson Ranch to Langtry	I.B&WC
24	Chaffin, N. B. Ranch	29° 54'	104° 02'	3,800	# 1947-1955	Standard	Alamito Creek	N. B. Chaffin
71	Comstock	29° 41'	101° 11'	1,530	May 1939-1955	Standard	Langtry to Del Rio	George Humphries
50	Corralitos Ranch	27° 07'	99° 27'	346	1938-1955	Cumulative	Laredo to Falcon Dam	I.B&WC
4	County Line	31° 01'	100° 59'	3,000	1938-1955	Recording	El Paso to Fort Quitman	I.B&WC
84	Curvo Creek	28° 21'	100° 19'	620	1954-1955	Cumulative	Eagle Pass to Laredo	I.B&WC
99	Date, O. C. Farm	26° 15'	98° 16'	130	1952-1955	Standard	Lower Rio Grande Valley	O. C. Date
75	Devils Lake	29° 34'	100° 59'	1,080	May 1939-1955	Standard	Devils River	C.P. & L. Co.
76	Diabio Dam Site	29° 25'	101° 02'	960	Oct. 1948-1955	Cumulative	Langtry to Del Rio	I.B&WC
48	Dove Mountain Ranch	29° 23'	102° 27'	2,770	1952-1955	Standard	Johnson Ranch to Langtry	I.B&WC
64	Dryden	30° 03'	102° 08'	2,160	# 1931-1955	Standard	Johnson Ranch to Langtry	I.B&WC
101	Edinburg Filtration Plant	26° 18'	98° 10'	100	1952-1955	Standard	Lower Rio Grande Valley	City of Edinburg
82	El Indio	28° 31'	100° 19'	725	#June 1941-1955	Standard	Eagle Pass to Laredo	Glen Stidham
3	Federal Guadalupe Bridge	31° 01'	103° 40'	3,610	Apr. 1940-1955	Standard	El Paso to Fort Quitman	I.B&WC
94	Falcon Dam	26° 34'	99° 08'	323	Apr. 1950-1955	Standard	Laredo to Falcon Dam	I.B&WC
5	Fletcher, H. T. Ranch	30° 12'	104° 16'	5,100	# 1939-1955	Standard	Alamito Creek	H. T. Fletcher
5	Fort Hancock Bridge	31° 16'	105° 51'	3,500	Apr. 1940-1955	Standard	El Paso to Fort Quitman	I.B&WC
89	Fort McIntosh (Laredo)	27° 30'	99° 31'	410	# 1850-1955	Standard	Laredo to Falcon Dam	I.B&WC
51	Forst, Julian	31° 06'	105° 36'	3,430	# 1937-1955	Recording	El Paso to Fort Quitman	Mrs. J. Garner
51	Garner Ranch	29° 56'	102° 39'	2,600	1949-1955	Visual	Johnson Ranch to Langtry	H. M. Greenwood
28	Greenwood, H. M. (Cienega Ranch)	29° 48'	104° 13'	4,000	Mar. 1941-1955	Standard	Alamito Creek	I.B&WC
7	Guayaco Arroyo	31° 10'	105° 40'	3,600	#May 1940-1955	Recording	El Paso to Fort Quitman	I.B&WC
61	Hairgrave, E. W. Ranch	30° 18'	102° 09'	2,650	Apr. 1952-1955	Standard	Johnson Ranch to Langtry	Jack Hardgrave
50	Hanford	30° 08'	103° 01'	3,870	1952-1955	Standard	Johnson Ranch to Langtry	Mattie V. Chambers
96	HCWID #6 (Elsa Office)	26° 19'	98° 01'	70	1952-1955	Standard	Lower Rio Grande Valley	HCWID #6
	HCWID #6 (Goodwin Pump #4) Avg. of 3 gages	26° 18'	98° 22'	185	1953-1955	Standard	Lower Rio Grande Valley	HCWID #6
98	HCWID #7 (Mission Office)	26° 17'	98° 18'	155	1952-1955	Standard	Lower Rio Grande Valley	HCWID #7
100	HCWID #8 (Edinburg Office)	24° 23'	98° 09'	85	1952-1955	Standard	Lower Rio Grande Valley	HCWID #8
72	Hicks, Lucius Ranch	29° 46'	101° 03'	1,690	Sept. 1954-1955	Standard	Devils River	Mr. Hinds
77	Hoffman Ranch	30° 38'	103° 51'	4,650	June 1955	Standard	Pecos River above Sheffield	Dr. A. J. Hoffman
91	Huisache Ranch	26° 57'	99° 20'	383	Aug. 1953-1955	Cumulative	Laredo to Falcon Dam	I.B&WC
68	Ingram Ranch	29° 52'	101° 29'	1,580	#Sept. 1954-1955	Standard	Pecos River - Sheffield to Pecos River Station	Arnum Humphries
2	Island Station	31° 32'	106° 14'	3,630	Recording	El Paso to Fort Quitman	I.B&WC	
35	Johnson Ranch	29° 01'	103° 23'	2,050	#July 1933-1955	Standard	Johnson Ranch to Langtry	I.B&WC
66	Justapura Ranch	27° 53'	99° 27'	720	Oct. 1952-1955	Cumulative	Adjacent to Eagle Pass to Laredo	Mrs. M. A. Ray
12	Kelly Ranch	30° 32'	104° 16'	5,320	# 1941-1955	Standard	Adjacent to Alamito Creek	George Jones
70	King, Martin Ranch	29° 43'	101° 21'	1,260	Nov. 1954-1955	Recording	Langtry to Del Rio	I.B&WC
41	Kokernot Ranch - Headquarters	29° 58'	103° 34'	4,120	1952-1955	Standard	Johnson Ranch to Langtry	David Kokernot
	Kokernot Ranch - No. 2	29° 59'	103° 35'	4,170	1949-1955	Standard	Johnson Ranch to Langtry	David Kokernot
105	La Feria Pump	26° 03'	97° 50'	60	1952-1955	Standard	Lower Rio Grande Valley	CCWID #3
19	Lane, Joe Ranch	30° 08'	103° 47'	4,960	1953-1955	Recording	Alamito Creek	Joe Lane
18	Laredo Water Plant	27° 33'	99° 31'	410	# 1930-1955	Standard	Eagle Pass to Laredo	City of Laredo
14	Livingston Ranch	29° 49'	104° 22'	4,150	# 1951-1955	Standard	Upper Presidio to Johnson Ranch	J. S. Livingston
20	Loma Vista Ranch	30° 13'	103° 47'	5,450	# 1941-1955	Standard	Alamito Creek	Hays Mitchell
110	Los Fresnos Pump	25° 57'	97° 34'	30	1952-1955	Standard	Lower Rio Grande Valley	CCWID #6
6	Madden Arroyo	31° 13'	105° 46'	3,500	Sept. 1941-1955	Recording	El Paso to Fort Quitman	I.B&WC
49	Maravillas	29° 44'	102° 47'	1,810	#Oct. 1949-1955	Standard	Johnson Ranch to Langtry	P. H. Vardiman
17	Marfa Experiment Station	30° 20'	103° 59'	4,800	# 1950-1955	Standard	Alamito Creek	Frank Duncan
30	Mariposa Mine	29° 20'	103° 43'	3,500	# 1951-1955	Standard	Upper Presidio to Johnson Ranch	C. E. McFarland
78	Maverick County Canal Headgate	29° 10'	100° 46'	870	Mar. 1948-1955	Standard	Del Rio to Eagle Pass	Gene Terrell
80	Maverick Power Plant	28° 50'	100° 33'	800	June 1952-1955	Standard	Del Rio to Eagle Pass	C. E. McFarland
33	Maverick Ranch	29° 19'	103° 27'	2,780	#Feb. 1950-1955	Standard	Upper Presidio to Johnson Ranch	Park Ranger
27	McCracken Ranch	29° 51'	104° 14'	4,250	# 1951-1955	Standard	Alamito Creek	J. M. Humphreys
23	McFarland Ranch - Game Pasture	30° 03'	104° 15'	5,370	1955	Standard	Alamito Creek	C. E. McFarland
23	McFarland Ranch - Casa Colorado	30° 06'	104° 17'	5,330	1955	Standard	Alamito Creek	C. E. McFarland
23	McFarland Ranch - Cement	30° 05'	104° 19'	5,450	1955	Standard	Alamito Creek	C. E. McFarland
23	McFarland Ranch - Deep Well	30° 01'	104° 17'	5,470	1955	Standard	Alamito Creek	C. E. McFarland
23	McFarland Ranch - Headquarters	30° 06'	104° 16'	5,310	# 1941-1955	Standard	Alamito Creek	M. E. Bomar
23	McFarland Ranch - Punta el Agua	30° 02'	104° 13'	5,210	1955	Standard	Alamito Creek	C. E. McFarland
23	McFarland Ranch - Shannon	30° 06'	104° 20'	5,480	1955	Standard	Alamito Creek	C. E. McFarland
55	McGonagill Ranch - East Mill	29° 20'	102° 55'	4,050	May 1952-1955	Visual	Johnson Ranch to Langtry	W. E. McGonagill
54	McGonagill Ranch - Headquarters	30° 30'	102° 58'	4,150	Apr. 1952-1955	Standard	Johnson Ranch to Langtry	W. E. McGonagill
97	Mission Pump	26° 10'	98° 20'	100	1952-1955	Standard	Lower Rio Grande Valley	HCWID #14
18	Mitchell, Kerr Ranch	30° 13'	104° 00'	4,450	# 1941-1955	Standard	Alamito Creek	Mrs. Kerr Mitchell
103	Murse Farm	26° 19'	97° 55'	65	1952-1955	Standard	Lower Rio Grande Valley	Mr. Murse
9	Neely Ranch	26° 59'	105° 32'	3,350	Aug. 1941-1955	Standard	Terlingua Creek	Mrs. Neely
32	Panther Junction	29° 51'	103° 45'	3,780	# 1914-1955	Standard	Johnson Ranch to Langtry	Cavin Woodward
46	Perryman Gap Ranger Station	29° 40'	103° 10'	2,930	June 1953-1955	Standard	Johnson Ranch to Langtry	Park Ranger
13	Petan Ranch	30° 04'	104° 29'	5,400	1950-1955	Standard	Adjacent to Fort Quitman to Upper Presidio	Park Ranger
43	Potter, A. M. Ranch	29° 46'	103° 25'	3,440	# 1952-1955	Standard	Johnson Ranch to Langtry	Mr. Poter
15	Presidio (I.B&WC Gage)	29° 34'	104° 23'	2,550	Oct. 1949-1955	Standard	Upper Presidio to Johnson Ranch	Ar. M. Potter
65	Pumpville	29° 57'	101° 44'	1,800	#Oct. 1946-1955	Standard	Johnson Ranch to Langtry	Pellum Bradford

* Some months or years missing

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In the United States

STA. NO.	NAME OF STATION	LATITUDE	LONGITUDE	ELEVATION (FEET)	PERIOD OF RECORD	TYPE OF GAGE	WATERSHED SUBDIVISION	OBSERVER
11	Quebec Ranch	30° 31'	104° 24'	4,600	1949-1955	Visual	Adjacent to Upper Presidio to Johnson Ranch	George Jones
79	Quemado	28° 56'	100° 37'	765	#Nov. 1941-1955	Standard	Del Rio to Eagle Pass	Lou McGee
29	Redford	29° 29'	104° 13'	2,500	July 1954-1955	Cumulative	Upper Presidio to Johnson Ranch	IB&WC
95	Roma	26° 24'	99° 01'	230	1941-1955	Standard	Falcon Dam to Rio Grande City	IB&WC
10	Roosevelt, Al Ranch	30° 32'	104° 33'	4,330	1951-1955	Visual	Adjacent to Fort Quitman to Upper Presidio	Al Roosevelt
107	San Benito Pump	26° 03'	97° 45'	50	Oct. 1933-1955	Standard	Upper Rio Grande Valley	IB&WC
45	San Valley Ranch	29° 33'	103° 16'	3,250	# 1952-1955	Standard	Johnson Ranch to Langtry	Mrs. W. G. Giljithur
26	San Jacinto Ranch	29° 44'	103° 59'	3,560	1953-1955	Visual	Alamo Creek	W. B. Chaffin
87	Santa Isabel Farm	27° 30'	99° 37'	440	Nov. 1952-1955	Standard	Eagle Pass to Laredo	Robert Cunningham
40	Santiago Peak Ranch	29° 55'	103° 23'	3,730	# 1953-1955	Standard	Johnson Ranch to Langtry	Ellis Owens
22	Sauz Ranch	30° 10'	104° 12'	4,880	# 1940-1955	Standard	Alamo Creek	H. T. Fletcher, Jr.
69	Shumla Bend	29° 50'	101° 25'	1,350	Nov. 1954-1955	Cumulative	Pecos River - Sheffield to Pecos River Station	IB&WC
52	Stemberg, Steve Ranch	30° 11'	103° 53'	4,300	# 1943-1955	Cumulative	Johnson Ranch to Langtry	IB&WC
34	Terlingua Creek Station	29° 12'	104° 24'	2,260	Mar. 1952-1955	Recording	Terlingua Creek	IB&WC
81	Tortuga Ranch	28° 39'	100° 26'	760	#May 1950-1955	Standard	Eagle Pass to Laredo	W. H. Brown
74	Upper Devils	29° 45'	101° 01'	1,240	Sept. 1934-1955	Cumulative	Devils River	IB&WC
31	Van Eman Ranch	30° 52'	103° 59'	3,890	# 1947-1955	Standard	Alamo Creek	L. T. Van Eman
72	Waclaw Ranch	29° 26'	100° 58'	1,110	Aug. 1955	Cumulative	Devils River	IB&WC
108	Whipple Farm	26° 04'	100° 29'	25	1952-1955	Standard	Lower Rio Grande Valley	Harry Whipple
37	Willoughby, Ray Ranch	30° 12'	103° 33'	5,150	1952-1955	Recording	Johnson Ranch to Langtry	Cliff St. Clair
38	Woodward, J. F. Ranch	30° 08'	103° 36'	4,750	1954-1955	Visual	Johnson Ranch to Langtry	J. F. Woodward
83	Wuensche Farm	28° 24'	100° 19'	640	# 1952-1955	Standard	Eagle Pass to Laredo	IB&WC
92	Zapata Station	26° 52'	99° 17'	300	May 1953-1955	Cumulative	Laredo to Falcon Dam	IB&WC

In Mexico

133	Allende, Coah.	28° 21'	100° 51'	1,170	# June 1947-1955	Standard	Rio Escondido	Hydraulic Resources
148	Anchurac, N. L.	27° 15'	100° 29'	650	June 1933-1955	Standard	Rio Salado	Hydraulic Resources
175	Anzañidas, Tamps.	26° 09'	98° 23'	110	Sept. 1934-1955	Standard	Lower Rio Grande Valley	Hydraulic Resources
113	Balleza, Chih.	26° 57'	100° 21'	5,870	# 1903-1955	Standard	Rio Conchos	Meteor. Sv. of Mexico
159	Cadereyta, N. L.	25° 36'	99° 59'	1,180	Sept. 1904-1955	Standard	Rio San Juan	Hydraulic Resources
176	Camargo, Tamps.	26° 20'	98° 40'	175	# 1953-1955	Standard	Rio San Juan	Hydraulic Resources
138	Castilanos, Coah.	26° 47'	101° 27'	2,410	# Oct. 1952-1955	Standard	Rio Salado	Hydraulic Resources
173	Gerralvo, N. L.	26° 24'	99° 37'	1,130	# Nov. 1953-1955	Recording	Rio San Juan	Hydraulic Resources
123	Chihuahua, Chih.	28° 38'	100° 04'	4,690	# 1900-1955	Standard	Rio Conchos	Meteor. Sv. of Mexico
166	Ciénega, Flores, N. L.	25° 58'	100° 10'	1,760	Apr. 1938-1955	Recording	Rio San Juan	Hydraulic Resources
129	Cd. Acuña, Coah.	29° 20'	100° 53'	919	# 1951-1955	Standard	Langtry to Del Rio	Mex. Section IB&WC
149	Cd. Mier, Tamps.	26° 26'	99° 09'	2,410	# Oct. 1952-1955	Standard	Falcon to Rio Grande City	Mex. Section IB&WC
150	Cd. Miguel Alemán, Tamps.	26° 24'	99° 02'	180	# 1951-1955	Standard	Rio Grande City	Mex. Section IB&WC
174	Comalcalco, Tamps.	26° 14'	98° 58'	270	# Mar. 1935-1955	Standard	Rio San Juan	Hydraulic Resources
181	Control (C-1 K-9), Tamps.	25° 58'	97° 49'	59	# June 1942-1955	Standard	Lower Rio Grande Valley	Hydraulic Resources
137	Cuatro Ciénegas, Coah.	27° 99'	102° 05'	2,430	# June 1925-1955	Standard	Rio Salado	Hydraulic Resources
124	Cuauhtémoc, Chih.	28° 24'	105° 52'	2,750	# June 1925-1955	Standard	Adjacent to Rio Conchos	Hydraulic Resources
126	Cuchillo, Parado, Chih.	29° 26'	104° 53'	2,982	# 1951-1955	Standard	Rio Conchos	Meteor. Sv. of Mexico
119	Delicias, Chih.	28° 11'	105° 31'	3,710	# Aug. 1933-1955	Standard	Rio Conchos	Hydraulic Resources
146	Don Martín, Coah.	27° 30'	100° 36'	790	# June 1927-1955	Standard	Rio Salado	Hydraulic Resources
161	El Cuchillo, N. L.	25° 43'	99° 16'	590	# June 1938-1955	Standard	Rio San Juan	Hydraulic Resources
162	Gral. Bravo, N. L.	25° 48'	99° 09'	390	# Sept. 1906-1955	Standard	Rio San Juan	Meteor. Sv. of Mexico
163	Gral. Cepeda, Coah.	25° 24'	101° 29'	4,920	Aug. 1926-1955	Standard	Rio San Juan	Hydraulic Resources
120	Guerrero, Chih.	28° 33'	107° 30'	6,560	# May 1903-1955	Standard	Adjacent to Rio Conchos	Meteor. Sv. of Mexico
170	Higueras, N. L.	25° 59'	100° 01'	1,640	# Sept. 1906-1955	Standard	Rio San Juan	Meteor. Sv. of Mexico
131	Jiménez, Coah.	29° 04'	100° 40'	814	# 1951-1955	Standard	Del Rio to Eagle Pass	Mex. Section IB&WC
114	La Boquilla, Chih.	27° 32'	105° 25'	4,320	# 1910-1955	Standard	Rio Conchos	Rio Conchos Hydro-electric Co.
121	La Junta, Chih.	28° 26'	107° 20'	6,730	# 1925-1955	Standard	Adjacent to Rio Conchos	Hydraulic Resources
147	Laguna de Salinillas, N. L.	27° 26'	100° 22'	750	# 1940-1955	Standard	Rio Salado	Hydraulic Resources
153	Laguna de Sánchez, N. L.	25° 21'	100° 16'	6,500	Apr. 1941-1955	Recording	Rio San Juan	Hydraulic Resources
124	Las Burris, Chih.	28° 27'	105° 26'	3,586	July 1949-1955	Standard	Rio Conchos	Hydraulic Resources
157	Las Comitas, N. L.	25° 26'	99° 07'	1,670	1940-1955	Standard	Rio San Juan	Hydraulic Resources
160	Las Enramadas, N. L.	25° 48'	99° 16'	730	# Sept. 1926-1955	Standard	Rio San Juan	Hydraulic Resources
118	Las Vigencias, Chih.	28° 10'	105° 38'	4,068	# 1943-1955	Standard	Rio Conchos	Hydraulic Resources
184	Linares, N. L.	24° 52'	99° 34'	1,180	# 1900-1955	Recording	Adjacent to Rio San Juan	Hydraulic Resources
172	Los Herreras, N. L.	25° 55'	99° 24'	820	# Sept. 1939-1955	Recording	Rio San Juan	Hydraulic Resources
171	Los Mochis, N. L.	25° 42'	99° 13'	270	# Sept. 1939-1955	Recording	Rio San Juan	Hydraulic Resources
125	Maclovio Herrera, Chih.	29° 03'	105° 08'	3,380	# 1924-1955	Standard	Rio Conchos	Meteor. Sv. of Mexico
183	Mérida, Yucatán	25° 07'	98° 35'	420	# Sept. 1939-1955	Standard	Adj. to Lower Rio Grande Valley	Hydraulic Resources
186	Molinova, Coah.	26° 54'	101° 25'	1,940	# 1897-1955	Standard	Rio Salado	Meteor. Sv. of Mexico
156	Montemorelos, N. L.	25° 12'	99° 50'	1,420	# Aug. 1904-1955	Standard	Rio San Juan	Hydraulic Resources
155	Monterrey, N. L.	25° 40'	100° 18'	1,730	# 1916-1955	Standard	Rio San Juan	Hydraulic Resources
142	Mizquiz, Chih.	27° 23'	101° 31'	1,650	# 1923-1955	Standard	Rio Salado	Meteor. Sv. of Mexico
143	Nueva Rosita, Coah.	27° 55'	101° 17'	1,410	# Aug. 1925-1955	Standard	Rio Salado	Meteor. Sv. of Mexico
135	Nuevo Laredo, Tamps.	27° 29'	99° 31'	420	# 1909-1955	Standard	Laredo to Falcon	Meteor. Sv. of Mexico
128	Ojinaga, Chih. (IB&WC)	29° 34'	104° 24'	2,585	# Apr. 1954-1955	Standard	Rio Conchos	Mex. Section IB&WC
127	Ojinaga, Chih. (M. S. M.)	29° 34'	104° 23'	2,520	# Nov. 1906-1955	Standard	Rio Conchos	Meteor. Sv. of Mexico
115	Ojo Caliente, Chih.	27° 37'	105° 16'	4,590	Feb. 1942-1955	Standard	Rio Conchos	Hydraulic Resources
141	Palestina, Coah.	29° 08'	100° 57'	1,080	# 1931-1955	Standard	Del Rio to Eagle Pass	Hydraulic Resources
116	Parral, Chih.	26° 56'	105° 39'	5,740	# 1903-1955	Standard	Rio Conchos	Meteor. Sv. of Mexico
132	Piedras Negras, Coah.	28° 12'	100° 31'	715	# 1951-1955	Standard	Del Rio to Eagle Pass	Mex. Section IB&WC
141	Progreso, Coah.	27° 28'	101° 03'	1,200	# Feb. 1943-1955	Standard	Rio Salado	Hydraulic Resources
166	Ramas Arizpe, Coah.	25° 32'	100° 58'	4,590	# Apr. 1907-1955	Standard	Rio San Juan	Meteor. Sv. of Mexico
136	Rancho San Juan de la Palma, Tamps.	26° 53'	99° 22'	348	# April 1955	Standard	Laredo to Falcon	Mex. Section IB&WC
151	Rayones, N. L.	25° 01'	100° 05'	1,970	# Oct. 1926-1955	Standard	Rio San Juan	Hydraulic Resources
164	Reata, Coah.	26° 07'	101° 04'	3,075	# 1940-1955	Standard	Rio San Juan	Hydraulic Resources
180	Retamal, Tamps.	26° 02'	98° 02'	82	# Oct. 1949-1955	Standard	Lower Rio Grande Valley	Mex. Section IB&WC
177	Reynosa, Tamps.	26° 06'	98° 17'	130	# 1941-1955	Recording	Lower Rio Grande Valley	Hydraulic Resources
167	Rincónada, N. L.	25° 40'	100° 40'	4,790	# Apr. 1944-1955	Standard	Rio San Juan	Hydraulic Resources
178	Río Bravo, Tamps.	26° 00'	98° 06'	85	# Sept. 1950-1955	Standard	Lower Rio Grande Valley	Hydraulic Resources
116	Rosetilla, Chih.	28° 14'	105° 19'	3,780	# 1940-1955	Standard	Rio Conchos	Hydro-electric Co.
144	Sabinas, Coah.	27° 54'	101° 17'	1,430	# May 1922-1955	Standard	Rio Salado	Rio Conchos Hydro-electric Co.
165	Saltillo, Coah.	25° 26'	101° 00'	5,280	# 1886-1955	Standard	Rio San Juan	Hydraulic Resources
111	San Antonio, Durango	26° 25'	105° 21'	5,430	# 1943-1955	Standard	Rio Conchos	Hydraulic Resources
140	San Buenaventura, Coah.	27° 05'	101° 33'	2,300	# Dec. 1926-1955	Standard	Rio Salado	Meteor. Sv. of Mexico
177	San Miguel de Camargo, Tamps.	26° 14'	98° 36'	130	# 1953-1955	Standard	Lower Rio Grande Valley	Hydraulic Resources
155	San Pedro, N. L.	25° 41'	100° 26'	1,970	# Oct. 1937-1955	Recording	Rio San Juan	Hydraulic Resources
169	Topo Chico, N. L.	25° 49'	100° 20'	1,640	# Aug. 1939-1955	Recording	Rio San Juan	Hydraulic Resources
182	Valle Hermoso, Tamps.	25° 41'	97° 48'	56	# June 1949-1955	Standard	Lower Rio Grande Valley	Hydraulic Resources
154	Villa Allende, N. L.	25° 17'	100° 01'	2,210	# Nov. 1938-1955	Standard	Rio San Juan	Hydraulic Resources
134	Villa Hidalgo, Coah.	25° 25'	100° 07'	1,460	# 1923-1955	Standard	Rio Salado	Hydraulic Resources
154	Villa Juárez, Coah.	27° 47'	100° 52'	490	# 1951-1955	Standard	Eagle Pass to Laredo	Mex. Section IB&WC
185	Villagrán, Tamps.	24° 29'	99° 29'	1,250	# Sept. 1939-1955	Recording	Rio Salado	Hydraulic Resources
117	Villalba, Chih.	28° 01'	105° 46'	3,940	# Oct. 1940-1955	Standard	Adjacent to Rio San Juan	Hydraulic Resources

Some months or years missing.

**EVAPORATION IN THE RIO GRANDE BASIN
IN INCHES**

In the United States

Tabulated below are records of evaporation observed at nine stations from Presidio, Texas to Falcón Dam near Roma, Texas. All of these stations were operated and maintained by the United States Section of this Commission, except two. The one at Del Rio, Texas was operated by the U.S. Weather Bureau and the one at Tortuga Ranch near Eagle Pass, Texas was operated by the Maverick Irrigation District. At all stations, the exposure to wind was uniform and relatively unimpeded. The sites were kept cleared of all high brush and trees within 150 feet and of all brush and tall weeds within 100 feet of the fenced enclosures. Within the enclosures, all vegetation either had been eradicated or was kept trimmed to within 3 inches of the ground surface. No water barrels, tanks, or objects of similar size were stored within 100 feet of the enclosures.

Three types of pans were in use at these stations:

1. U.S. Weather Bureau Standard pan. A circular pan, 4 feet in diameter and 10 inches deep, made of 22-gage galvanized iron, is set on a wooden platform with the rim of the pan 16 inches above the ground. The water level is maintained between 2 and 3 inches below the rim of the pan. This type of pan was in operation at Dryden, Del Rio, and Fort McIntosh (Laredo), Texas.

2. A circular pan, 2 feet in diameter and 36 inches deep, made of 22-gage galvanized iron, is set in the ground with the rim of the pan 3 inches above the ground surface and the top covered with a circular screen of No. 4 (1/4" mesh) galvanized hardware cloth. The water level is maintained between 2.5 and 3.5 inches below the rim of the pan. This type of pan was in operation at Presidio, Johnson Ranch, Maravillas Creek, Dryden, Fort McIntosh (Laredo), and Falcón Dam, Texas. This same type of pan, equipped with an automatic feed tank that maintains the water at a level 3 inches below the rim of the pan, was in operation at Wardlaw Ranch and at Tortuga Ranch near Eagle Pass, Texas.

3. A circular pan, 12 feet in diameter and 36 inches deep, made of 20-gage galvanized iron, is set in the ground with the rim of the pan 3 inches above the ground surface. The water level is maintained between 2.5 and 3.5 inches below the rim of the pan. This type of pan was in operation at Dryden and Fort McIntosh (Laredo), Texas.

Month	Presidio, Texas		Johnson Ranch, Texas		Maravillas, Texas		Dryden, Texas						
	1955	Average	1955	Average	1955	Average	1955	2-Foot Pan		4-Foot Pan		12-Foot Pan	
		Nov. 1949-1955		Oct. 1949-1955		# Nov. 1949-1955		Sept. 1949-1955	1955	Average	Oct. 1944-1955	1955	Average
Jan.	3.97	4.22	4.35	4.61	5.30	4.78	3.21	3.96	3.83	4.55	2.92	3.74	
Feb.	5.64	5.38	5.94	6.00	4.85	5.16	4.46	4.95	5.82	6.24	4.49	4.84	
Mar.	9.42	9.11	9.45	9.21	8.91	7.75	7.81	7.74	10.35	10.39	7.65	7.38	
Apr.	11.63	11.01	12.60	11.54	10.76	10.17	9.00	8.89	13.89	12.83	10.12	9.50	
May	13.03	13.59	13.40	13.99	12.98	10.92	11.16	10.82	16.51	15.01	12.40	11.20	
June	15.17	14.58	16.52	15.46	14.08	12.56	10.97	11.76	15.69	16.14	11.09	12.15	
July	12.25	13.43	13.08	14.85	11.50	12.48	13.23	13.63	16.67	17.02	11.56	12.93	
Aug.	13.43	14.09	13.45	14.45	11.84	11.60	9.58	12.05	13.20	15.48		12.20	
Sept.	12.16	12.29	12.20	12.22	9.21	9.75	6.88	8.97	10.31	11.95		9.28	
Oct.	7.57	9.06	8.03	9.32		7.79	8.88	7.18	9.78	8.14	8.24	6.77	
Nov.	6.06	5.71	6.89	6.05	7.84	5.94	5.20	5.32	6.28	6.02	4.77	4.83	
Dec.	3.55	3.99	3.38	4.55	6.75	4.94	4.24	4.51	5.49	4.86	3.70	3.77	
Total	113.88	116.46	119.29	122.25		103.84	94.62	99.78	127.82	128.63		98.59	

Month	Del Rio, Texas		Tortuga Ranch, Texas		Ward law Ranch	Fort McIntosh, Texas						Falcón Dam, Texas		
	1955	Average	#Average 1952-1955	1955		1955	Average	1955	Average	1955	Average	1955	Average	
		1952-1955					Feb. 1950-1955		Feb. 1950-1955		Feb. 1950-1955		Apr. 1950-1955	
Jan.	3.64	4.51		3.80		3.35	4.69	4.23	5.89	2.71	3.39	3.84	4.27	
Feb.	5.05	6.28		5.33		3.81	4.68	5.04	6.12	3.36	4.22	3.99	5.68	
Mar.	7.79	8.60		5.93		7.61	7.15	8.88	9.02	6.72	6.52	7.98	8.04	
Apr.	12.57	11.19		10.19		10.49	10.11	13.45	13.36	9.57	9.40	9.86	10.93	
May	12.22	13.32		13.18		12.60	12.21	15.84	14.77	11.24	10.88	12.47	12.59	
June	13.80	14.66		14.76		12.06	13.43	14.55	15.86	11.33	11.90	13.55	13.85	
July	14.00	16.07				10.74	12.37	12.61	14.70	9.74	10.73	11.36	12.16	
Aug.	11.97	14.34				6.70	6.43	8.87	8.15	10.86	6.28	8.26	5.46	
Sept.	9.92	11.09											8.67	
Oct.	9.63	8.54	7.30	7.24		8.22	7.69	7.32	8.65	8.10	6.67	6.28	6.69	
Nov.	5.25	5.30	4.56	4.46		5.05	4.38	4.66	4.76	5.20	3.74	4.09	5.05	
Dec.	3.41	4.05	3.64	3.39		2.59	2.75	3.75	3.19	4.26	2.42	3.18	3.59	
Total	109.25	117.93				90.48	98.03	110.65	119.18	81.65	86.47	92.46	102.08	

* Some months missing

**EVAPORATION IN THE RIO GRANDE BASIN
IN INCHES**

In Mexico

Tabulated below are records of evaporation observed at ten stations operated and maintained by the Mexican Section of this Commission. Eight stations are located along the Rio Grande from Cd. Acuña, Coahuila to Retamal, Tamaulipas and two are located on the Rio Conchos at Cuchillo Parado, Chihuahua and Ojinaga, Chihuahua. At all stations, the sites were kept cleared of all high brush and trees within 150 feet and of all brush and tall weeds within 100 feet of the fenced enclosures. Inside the enclosures, all vegetation either had been eradicated or was kept trimmed to within 3 inches of the ground surface. Except for a water barrel and a thermometer shelter in the northeast and northwest corners of the enclosures, the exposure to wind was uniform and relatively unimpeded.

The type of pan used at all these stations was a U.S. Weather Bureau Standard Pan, 4 feet in diameter and 10 inches deep, made of 22-gage galvanized iron, set on a wooden platform with the rim of the pan 16 inches above the ground. The water level was maintained between 2 and 3 inches below the rim of the pan and was measured with a micrometer gage.

Data for other evaporation stations in the Rio Grande Basin in Mexico, which were operated by various Mexican agencies, are available in Water Bulletin No. 25, published by the Mexican Section of this Commission.

Month	Cuchillo Parado, Chih.		Ojinaga, Chih.		Cd. Acuña, Coah.		Jiménez, Coah.		Piedras Negras, Coah.	
	1955	# Average 1951-1955	1955	Average Apr. 1954-1955	1955	Average 1951-1955	1955	# Average 1951-1955	1955	# Average 1951-1955
Jan.	3.59	4.72	3.12		3.52	4.28	3.39	4.35	2.82	3.50
Feb.	6.33	6.39	4.66		4.75	5.68	4.09	4.99	3.50	5.01
Mar.	10.73	10.80	7.46		7.37	8.41	6.30	7.28	6.91	7.05
Apr.	13.80	13.51	9.59	9.36	10.45	10.11	9.36	8.74	8.42	8.98
May	16.19	16.54	11.64	11.76	10.81	11.19	10.00	10.01	8.92	10.69
June	17.32	17.43	12.38	12.64	12.05	12.56	11.47	11.84	14.20	12.38
July	15.01	15.50	12.47	12.08	12.10	13.98	10.75	13.10	11.46	14.20
Aug.	13.18	14.46	9.26	9.35	10.20	12.78	8.85	11.55	9.34	12.27
Sept.	12.62	7.96	8.24	8.86	9.54	7.39	8.15	6.15	8.15	
Oct.	Discon- tinued	9.41	5.52	5.96	7.91	6.78	6.54	5.99	6.42	6.23
Nov.		5.59	3.77	3.98	4.07	4.29	3.72	3.70	3.75	3.72
Dec.		4.20	3.09	3.20	3.06	3.66	2.62	3.16	2.49	3.21
Total		131.17	90.92		95.15	103.26	84.48	92.86	84.38	95.39

Month	Hidalgo, Coah.		Cd. Miguel Alemán, Tamps.		Rancho San Juan de la Palma, Tamps.		Cd. Mier, Tamps.		Retamal, Tamps.	
	1955	Average 1951-1955	1955	# Average 1951-1955	1955		1955		1955	Average 1951-1955
Jan.	4.69	5.08	4.48	5.47					4.52	5.02
Feb.	5.73	6.16	5.50	6.92					4.31	5.49
Mar.	10.38	9.39	9.58	9.21					6.51	7.41
Apr.	13.12	11.87	10.65	10.81	11.91				8.21	8.85
May	15.17	14.17	11.61	11.88	12.32				8.26	9.70
June	15.57	15.01	13.38	13.44	13.63				11.17	10.51
July	16.28	17.02	14.43	15.06	13.74				7.72	9.91
Aug.	13.76	16.16	13.32	14.79	12.89				8.24	9.76
Sept.	9.76	11.50	7.95	9.12	9.33				4.74	7.21
Oct.	8.94	8.44	Discon- tinued	7.26	8.44		8.98		5.55	6.06
Nov.	4.00	5.48		4.88	4.54		4.27		4.65	4.10
Dec.	3.61	4.84		4.38	3.70		3.59		3.29	3.95
Total	121.01	125.12		113.22					77.17	87.97

* Some months missing

TEMPERATURE, HUMIDITY, AND WIND

The mean monthly temperatures shown for Johnson Ranch in the United States and all stations in Mexico are averages of daily maximum and minimum thermometer observations.

The mean monthly temperatures and relative humidities at the Dryden, Tortuga Ranch, Fort McIntosh, and Falcón Dam evaporation stations were integrated from continuous records of hygrothermographs, housed in louvered shelters, with the sensing elements of the instruments 16 inches above the ground and 9 feet southwest of either a 2 or 4-foot diameter evaporation pan.

Monthly mean wind velocities are based on the total miles of wind movement indicated by a standard 3-cup anemometer installed and operated according to specifications for a Class A Weather Bureau evaporation station.

Mean Temperature - Degrees Fahrenheit

In the United States

Month	Johnson Ranch, Texas		Dryden, Texas		Tortuga Ranch, Tex.		Fort McIntosh, Tex.		Falcón Dam, Texas	
	1955	# Average Aug. 1945-1955	1955	Average July 1947-1955	1955		1955	Average Feb. 1950-1955	1955	Average July 1950-1955
Jan.	54.6	53.9	48.7	48.7			54.4	59.4	59.4	61.5
Feb.	60.4	59.8	52.0	53.8			68.0	64.2	62.3	64.0
Mar.	69.5	67.8	63.2	61.0			69.5	69.8	72.2	71.5
Apr. (Discontinued)	76.1	74.3	69.5				79.3	77.1	79.7	77.7
May	83.5	78.3	76.5				84.1	81.8	84.6	81.9
June (Mar. 31)	89.9	81.1	82.7	90.0			87.1	86.4	86.9	86.7
July	89.6	84.2	84.4	83.9			87.6	88.2	87.1	87.8
Aug.	89.3	82.2	83.4	84.7			88.4	88.4	87.8	87.8
Sept.	83.8	78.5	78.0	80.5			82.7	83.9	80.6	83.2
Oct.	75.4	69.3	69.0	70.7			74.7	75.6	75.0	75.7
Nov.	62.0	55.6	55.9	59.5			64.2	63.9	64.4	65.0
Dec.	55.0	51.4	49.9	51.7			58.6	58.8	60.9	59.8
Yearly		73.8	68.2	67.7			74.9	74.8	75.1	75.2

In Mexico

Month	Cuchillo Parado, Chih.		Cd. Acuña, Coah.		Jiménez, Coah.		Piedras Negras, Coah.	
	1955	# Average 1951-1955	1955	Average Apr. 1951-1955	1955	# Average Mar. 1951-1955	1955	# Average Apr. 1951-1955
Jan.	46.0	51.6	50.7	54.6	53.2	56.2	48.4	53.2
Feb.	51.8	53.9	55.4	58.3	57.6	59.4	51.4	56.4
Mar.	61.3	61.1	65.8	65.5	65.8	65.3	62.6	62.8
Apr.	68.4	68.8	76.3	73.9	75.4	72.8	69.8	71.2
May	76.6	76.6	81.3	79.9	79.5	78.2	76.6	77.1
June	83.8	85.8	81.7	86.3	83.1	85.2	80.8	84.7
July	84.9	84.5	86.9	89.1	83.8	87.2	81.1	87.0
Aug.	83.1	84.7	86.7	89.5	84.4	87.1	81.3	86.0
Sept.		79.2	84.7	84.0	80.6	80.7	77.7	78.9
Oct.		70.0	72.1	72.7	70.2	72.4	63.3	68.0
Nov.		56.8	58.1	59.3	59.9	60.5	53.1	56.7
Dec.		49.6	52.5	52.4	54.1	53.7		51.5
Yearly		68.6	71.0	72.1	70.6	71.6		69.5

Month	Villa Hidalgo, Coah.		San Juan de la Palma, Tamps.		Cd. Miguel Alemán, Tamps.		Cd. Mier, Tamps.		Retamal, Tamps.	
	1955	Average Aug. 1951-1955	1955	1955	# Average 1951-1955	1955	1955	1955	Average 1951-1955	
Jan.	54.9	58.5			59.0	61.1			65.8	64.8
Feb.	59.7	60.0			61.9	63.7			64.2	64.9
Mar.	66.0	67.5			72.5	72.3			75.2	73.0
Apr.	75.9	75.7	76.1	80.4	78.5				82.4	78.8
May	81.0	79.0	79.9	84.6	82.4				83.1	81.6
June	83.5	85.7	87.6	86.4	87.2				88.3	86.5
July	81.3	86.1	88.5	87.4	88.4				85.3	86.8
Aug.	81.3	86.5	89.1	88.7	88.8				89.2	87.9
Sept.	77.2	81.8	83.8	84.2	84.5				81.3	82.9
Oct.	70.9	73.6	75.2		75.8	74.5			75.9	75.9
Nov.	63.7	62.1	64.4		65.4	67.1			66.9	66.6
Dec.	54.5	56.0	61.7		59.9	62.2			63.7	62.6
Yearly	70.8	72.7			75.7				76.8	76.0

Some months missing

TEMPERATURE, HUMIDITY, AND WIND

Mean Relative Humidity – Percent In the United States

Month:	Dryden, Texas		Tortuga Ranch, Texas		Fort McIntosh, Texas		Falcón Dam, Texas	
	1955	Average July 1947-1955	1955		1955	Average Feb. 1950-1955	1955	Average July 1950-1955
Jan.	63.6	54.2			62.4	53.8	68.9	60.8
Feb.	50.6	47.9			59.7	52.3	67.4	57.0
Mar.	39.6	40.4			51.0	49.6	55.0	57.1
Apr.	38.5	46.0			51.6	51.8	54.6	57.4
May	52.8	51.8			57.5	55.0	59.8	61.2
June	56.4	53.2	63.1		54.4	55.3	59.3	62.2
July	56.9	49.4	71.4		56.4	52.0	60.0	58.0
Aug.	59.6	50.8	70.5		57.1	53.8	60.0	59.7
Sept.	64.1	52.6	75.1		70.2	56.6	78.7	64.2
Oct.	44.2	54.0	60.7		52.7	54.8	54.4	61.5
Nov.	51.9	49.2	69.5		62.0	56.9	68.1	62.4
Dec.	51.3	50.5	69.1		63.3	56.0	63.9	58.4
Yearly	52.5	50.0			58.2	54.0	62.5	60.0

Mean Wind Speed – Miles Per Hour In the United States

Month	Dryden, Texas		Tortuga Ranch, Texas		Fort McIntosh, Texas		Falcón Dam, Texas	
	1955	# Average July 1947-1955	1955		1955	Average Feb. 1950-1955	1955	Average July 1950-1955
Jan.	4.3	4.4			3.1	3.2	4.5	4.2
Feb.	4.8	5.0			3.6	3.8	4.8	5.0
Mar.	5.0	5.7			4.0	4.4	5.5	5.7
Apr.	5.5	6.0			4.1	4.6	6.1	6.4
May	*	6.7			4.3	4.6	6.3	6.8
June	*	7.1	7.0		4.6	5.0	7.0	7.5
July	7.6	6.1	5.3		4.5	4.6	7.2	7.3
Aug.	4.3	5.0	3.6		3.4	4.3	5.3	6.0
Sept.	4.6	4.4	3.7		3.0	3.1	4.0	4.6
Oct.	3.7	4.1	2.8		2.6	2.8	3.5	3.7
Nov.	4.2	4.2	2.7		2.7	2.8	4.4	4.2
Dec.	2.7	3.8	1.7		2.1	2.6	3.3	3.8
Yearly		5.2			3.5	3.8	5.2	5.4

Some months missing * Anemometer damaged by hail on May 15. Reinstalled on June 11.

DRAINAGE BASIN AND IRRIGATED AREAS

Along the Rio Grande and Tributaries — 1955

The total area within the outer rim of the Rio Grande basin is about 335,500 square miles; however, in many places, particularly along the southwestern boundary of the basin, large areas contribute no surface runoff to the Rio Grande. Such non-contributive areas constitute about 45.7% of the total area, leaving 182,215 square miles of productive watershed. Only the productive part of the watershed is included in the list below. New and improved maps now define the outer rim of the Rio Grande basin in Mexico and its various watersheds. For use in this bulletin, such watershed areas have been recomputed, but recompilation has not yet been made of all the areas within the outer rim of the basin in Mexico.

The irrigated areas shown below are from the most reliable sources available and are listed according to the downstream sequence of the points of diversion of their irrigation water and, consequently, they may or may not be wholly within the indicated main river or tributary reach. They are all within the Rio Grande basin, except in the Lower Rio Grande Valley below the Rio Grande City gaging station, where water is diverted at numerous points to irrigate lands which are adjacent to but do not contribute surface runoff to the Rio Grande. All of the lands are equipped with irrigation facilities.

Irrigated areas along the Rio Grande above Elephant Butte Dam and on the Pecos River above Girvin, published in Water Bulletin No. 23 and previous bulletins are not included in the tabulation shown below. Also eliminated from this bulletin are "Secondary" irrigated areas in Mexico. The areas shown below are the sum of the "Primary" and 50% of the "Secondary" areas. Only areas irrigated in 1955 are tabulated here.

DESIGNATIONS OF AREAS AND GAGING STATIONS	Drainage Basin Square Miles			Irrigated Areas—Acres		
	United States	Mexico	Total	United States	Mexico	Total
Above Elephant Butte Dam	25,923	0	25,923			
Elephant Butte Dam to Caballo Dam	1,295	0	1,295	0	0	0
Above Caballo Dam	27,218	0	27,218	0	0	0
Caballo Dam to El Paso Station	2,049	0	2,049	95,884	0	95,884
Above El Paso Gaging Station	29,267	0	29,267	95,884	0	95,884
El Paso Station to American Dam	4	0	4	13,873	0	13,873
Above American Dam	29,271	0	29,271	109,757	0	109,757
American Dam to Juárez Station	41	38	79	0	2,773	2,773
Above Juárez Gaging Station	29,312	38	29,350	109,757	2,773	112,530
Juárez Station to Island Station	146	455	601	33,155	0	33,155
Above Island Gaging Station	29,458	493	29,951	142,912	2,773	145,685
Island Station to County Line Station	485	174	659	0	0	0
American Dam to County Line Station - Total	672	667	1,339	33,155	2,773	35,928
Above County Line Gaging Station	29,943	667	30,610	142,912	2,773	145,685
County Line Station to Fort Quitman Station	663	762	1,425	5,886	0	5,886
Above Fort Quitman Gaging Station	30,606	1,429	32,035	148,798	2,773	151,571
Fort Quitman Station to La Nutria	1,041	596	1,637	a 816	0	816
Above La Nutria Gaging Station (Inactive)	31,647	2,025	33,672	149,614	2,773	152,387
La Nutria to Upper Presidio Station	580	736	1,316	b 479	504	983
Above Upper Presidio Gaging Station	32,227	2,761	34,988	T50,093	3,277	153,370
Río Conchos above Boquilla Dam	0	8,202	8,202	0	2,965	2,965
Río Conchos below Boquilla Dam	0	21,065	21,065	0	182,212	182,212
Río Conchos - Total	0	29,267	29,267	0	185,177	185,177
Alamito Creek above Gaging Station	1,504	0	1,504	c 412	0	412
Upper Presidio to Lower Presidio Gaging Station - excluding above tributaries	367	77	444	d 2,994	396	3,390
Upper Presidio to Lower Presidio Station - Total	1,871	29,344	31,215	3,406	185,573	188,979
Above Lower Presidio Gaging Station	34,098	32,105	66,203	153,499	188,850	342,349
Terlingua Creek above Gaging Station	1,070	0	1,070	e 1,905	0	1,905
Lower Presidio to Johnson Ranch Station - excluding Terlingua Creek	1,093	2,349	3,442	f 1,030	0	1,030
Lower Presidio to Johnson Ranch - Total	2,163	2,349	4,512	2,935	3,212	6,147
Above Johnson Ranch Gaging Station	36,261	34,454	70,715	156,434	192,062	348,496
Johnson Ranch Station to Agua Verde Station	4,600	6,917	11,517	g 8,907	0	8,907
Above Agua Verde Gaging Station	40,861	41,371	82,232	165,341	192,062	357,403
Agua Verde Station to Langtry Station	1,994	569	2,563	0	0	0
Above Langtry Gaging Station	42,855	41,940	84,795	165,341	192,062	357,403
Pecos River above Girvin	29,562	0	29,562			
Pecos River, Girvin to Shumla Station	5,600	0	5,600	h 0	0	0
Pecos River - above Station at Mouth	35,308	0	35,308	0	0	0
Goodenough Spring above Gaging Station	1	0	1	0	0	0
Devils River above Upper Devils Station	3,903	0	3,903	0	0	0
Devils River, Upper Devils Station to Devils River Station	120	0	120	0	0	0
Devils River - above Station near Mouth	4,305	0	4,305	i 0	0	0
Langtry Station to Diablo Station - excluding above tributaries	221	1,793	2,014	0	0	0
Langtry Station to Diablo Station - Total	39,835	1,793	41,628	0	0	0
Above Diablo Gaging Station	82,690	43,733	126,423	165,341	192,062	357,403

See footnotes on following page.

**DRAINAGE BASIN AND IRRIGATED AREAS
Along the Rio Grande and Tributaries – 1955**

DESIGNATIONS OF AREAS AND GAGING STATIONS	Drainage Basin Square Miles			Irrigated Areas—Acres		
	United States	Mexico	Total	United States	Mexico	Total
Arroyo las Vacas above Gaging Station	0	358	358	0	988	988
Diablo Station to Del Rio Station - excluding Arroyo las Vacas	60	99	159	664	0	664
Diablo Station to Del Rio Station - Total	60	457	517	664	988	1,652
Above Del Rio Gaging Station (Inactive)	82,750	44,190	126,940	166,005	193,050	359,055
San Felipe Creek above Gaging Station	46	0	46	1,081	0	1,081
Pinto Creek above Gaging Station	236	0	236	0	0	0
Río San Diego above Gaging Station	0	848	848	0	12,849	12,849
Río San Diego - Total	0	856	856	0	13,961	13,961
Río San Rodrigo above Gaging Station	0	669	669	0	5,313	5,313
Río San Rodrigo - Total	0	958	958	0	6,449	6,449
Del Rio Station to Eagle Pass Station - excluding above tributaries	1,213	326	1,539	37,825	2,647	40,472
Del Rio Station to Eagle Pass Station - Total	1,495	2,140	3,635	38,906	23,057	61,963
Above Eagle Pass Gaging Station	84,245	46,330	130,575	204,911	216,107	421,018
Río Escondido above Gaging Station	0	1,279	1,279	0	10,502	10,502
Río Escondido - Total	0	1,284	1,284	0	10,502	10,502
Eagle Pass Station to San Antonio Crossing Station - excluding Río Escondido	237	251	488	350	247	597
Eagle Pass to San Antonio Crossing Station - Total	237	1,535	1,772	350	10,749	11,099
Above San Antonio Crossing Gaging Station	84,482	47,865	132,347	205,261	226,856	432,117
San Antonio Crossing to Laredo Station	1,236	2,393	3,629	5,037	13,596	18,633
Above Laredo Gaging Station	85,718	50,258	135,976	210,298	240,452	450,750
Río Salado above Venustiano Carranza Dam	0	17,296	17,296	0	58,811	58,811
Río Salado above Las Tortillas Gaging Station	0	24,877	24,877	0	87,821	87,821
Río Salado above Cd. Guerrero Gaging Station	0	25,112	25,112	0	87,821	87,821
Laredo Station to Falcón Dam - excluding Río Salado	2,042	1,352	3,394	8,961	9,652	18,613
Laredo Station to Falcón Dam - Total	2,042	26,464	28,506	8,961	97,473	106,434
Above Falcón Dam	87,760	76,722	164,482	219,259	337,925	557,184
Falcón Dam to Chapeño Gaging Station	2	54	56	0	0	0
Above Chapeño Gaging Station	87,762	76,776	164,538	219,259	337,925	557,184
Río Alamo above Gaging Station	0	1,692	1,692	0	7,660	7,660
Chapéño Station to Roma Station - excluding Río Alamo	85	149	234	2,390	3,363	5,753
Chapéño Station to Roma Station - Total	85	1,841	1,926	2,390	11,023	13,413
Above Roma Gaging Station (Inactive)	87,847	78,617	166,464	221,649	348,948	570,597
Río San Juan above María Gómez Dam	0	13,429	13,429	0	102,548	102,548
Río San Juan - Marte Gómez Dam to Camargo Gaging Sta.	0	172	172	0	163,820	163,820
Río San Juan - Total	0	13,601	13,601	0	266,368	266,368
Roma Station to Fort Ringgold Station - excluding Río San Juan above Camargo	135	196	331	4,751	2,189	6,940
Roma Station to Fort Ringgold Station - Total	135	13,797	13,932	4,751	268,557	273,308
Above Fort Ringgold Gaging Station	87,982	92,414	180,396	226,400	617,505	843,905
Fort Ringgold Station to Anzaldías Dam Site	952	790	1,742	149,694	428,486	578,180
Above Anzaldías Dam Site	88,934	93,204	182,138	376,094	1,045,991	1,422,085
Anzaldías Dam Site to Progreso Station	13	22	35	133,234	5,024	138,258
Above Progreso Gaging Station	88,947	93,226	182,173	509,328	1,051,015	1,560,343
Progreso Station to San Benito Station	7	7	14	286,920	7,408	294,328
Above San Benito Gaging Station	88,954	93,233	182,187	796,248	1,058,423	1,854,671
San Benito Station to Matamoros Station	12	12	24	79,104		
Above Matamoros Gaging Station (Inactive)	88,966	93,245	182,211	875,352		
Matamoros Station to Lower Brownsville Station	2	2	4	17,878		
Fort Ringgold Station to Lower Brownsville Station	986	833	1,819	666,830	443,720	1,110,550
Above Lower Brownsville Gaging Station	88,968	93,247	182,215	893,230	1,061,225	1,954,455
Lower Brownsville Station to Gulf of Mexico				4,938	4,265	9,203
Above Gulf of Mexico				898,168	1,065,490	1,963,658

a Excludes 865 acres irrigated from wells and 6 acres irrigated from springs. b Excludes 650 acres irrigated from wells and includes 146 acres irrigated by spreader dams. c Excludes 228 acres irrigated from wells and 50 acres irrigated from springs; includes 262 acres irrigated by spreader dams. d Excludes 1,122 acres irrigated from wells and 10 acres irrigated from springs; includes 250 acres irrigated by spreader dams. e Irrigated by spreader dams. f Excludes 242 acres irrigated from wells. g Excludes 52 acres irrigated from wells and 12 acres irrigated from springs; includes 8,566 acres irrigated by spreader dams. h Excludes 13,311 acres irrigated from wells and 175 acres irrigated from springs. i Excludes 1,040 acres irrigated from wells. j Excludes 8 acres irrigated from wells. k Excludes 66 acres irrigated from wells. l Excludes 470 acres irrigated from wells. m Excludes 482 acres irrigated from wells.

CORRECTIONS TO PREVIOUS WATER BULLETINS**PECOS RIVER NEAR SHUMLA**

Water Bulletin No. 24, Page 22

Under the textual heading, DESCRIPTION, the location of the bubbler water-stage recorder on rock ledge was erroneously shown as "about 210 feet above river bed". The correct location is "about 125 feet above the river bed".

Under REMARKS, the last sentence should read: "The flood of June 1954 reached a gage height of 121.7 feet, or an elevation of approximately 1,281.2 feet above mean sea level at this station."

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

The watershed subdivisions for C. L. Arthur Ranch and Johnson Ranch Stations in Water Bulletin No. 23, page 87, and for C. L. Arthur Ranch, Johnson Ranch, and Martin King Ranch in Water Bulletin No. 24, page 95, are in error. The correct subdivisions for these stations are as follows:

<u>Station</u>	<u>Watershed Subdivision</u>
Arthur, C. L. Ranch	Pecos River above Sheffield
Johnson Ranch	Johnson Ranch to Langtry
King, Martin Ranch	Langtry to Del Rio